(FILE 'HOME' ENTERED AT 07:28:52 ON 14 JAN 2005)

FILE 'CAPLUS' ENTERED AT 07:29:03 ON 14 JAN 2005

		E	MCCAFFREY TIMOTHY/AU
L1	41	S	E3-4
L2	883	S	FUCOIDAN
L3	4	S	L1 AND L2
L4	1293448	S	BETA
L5	3	S	L3 AND L4

FILE 'MEDLINE, BIOSIS, EMBASE, CAPLUS' ENTERED AT 07:31:24 ON 14 JAN 2005

L6	2436	S	L2
L7	1304	S	FUCOIDIN
L8	3361	S	L6 OR L7
L9	140279	S	TRANSFORMING GROWTH FACTOR
L10	102951	S	TGF
L11	3011109	S	L4
L12	213193	S	AUTOIMMUNE
L13	661042	S	DIABETES
L14	81392	S	SEPTIC
L15	122188	S	SEPSIS
L16	13086	S	ENTEROPATHY
L17	93242	S	MULTIPLE SCLEROSIS
L18	7240489	S	L9 OR 10
L19	1619		DUP REM L8 (1742 DUPLICATES REMOVED)
L20	642602	S	L18 AND L11
L21	1115931	S	L12 OR L13 OR L14 OR L15 OR L16 OR L17
L22	81	S	L19 AND (L20 OR L21)
L23	152306	S	L9 OR L10
L24	127251	S	L23 AND L11
L25	19	S	L19 AND L24
L26	3	S	L25 NOT L22

L29 ANSWER 1 OF 13 MEDLINE on STN
ACCESSION NUMBER: 2002087198 MEDLINE
DOCUMENT NUMBER: PubMed ID: 11815383
TITLE: The effects of heparin and related molecules on vascular permeability and neutrophil accumulation in rabbit skin.
AUTHOR: Jones Helen; Paul William; Page Clive P
CORPORATE SOURCE: Sackler Institute of Pulmonary Pharmacology, GKT School of Biomedical Sciences, 5th Floor Hodgkin Building, King's College London, Guy's Campus, London SE1 9RT.. helenie.jones@kcl.ac.uk
SOURCE: British journal of pharmacology, (2002 Jan) 135 (2) 469-79. Journal code: 7502536. ISSN: 0007-1188.
PUB. COUNTRY: England: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200204
ENTRY DATE: Entered STN: 20020130
Last Updated on STN: 20020404
Entered Medline: 20020402

AB Unfractionated heparin (UH) has been shown to possess a wide range of properties which are potentially anti-inflammatory. Many of these studies, including effects of heparin on adhesion of inflammatory cells to endothelium, have been carried out in vitro. In the present study, we have used radioisotopic techniques to study the effect of UH, and related molecules, on in vivo inflammatory responses (plasma exudation (PE) and PMN accumulation) in rabbit skin induced by cationic proteins, mediators and antigen. Intradermal (i.d.) pretreatment with UH dose-dependently inhibited poly-L-lysine (PLL)-induced responses. The same treatment had no effect on antigen (extract of Alternaria tenuis, AT)-, formyl-methionyl-leucyl-phenylalanine (fMLP)- or leukotriene (LT) B(4)-induced responses, although i.d. dextran sulphate (DS) significantly inhibited responses to all of these mediators. High dose (10,000 u kg(-1)) intravenous UH significantly decreased cutaneous responses to fMLP and LTB(4). By comparison, the selectin inhibitor, **fucoidin**, and DS, were very effective inhibitors of these responses, and of responses to AT and PLL. In contrast to the weak effect in the in vivo studies, UH significantly inhibited in vitro homotypic aggregation of rabbit PMNs, showing that it can modify PMN function. Our data with i.d. UH confirm the important ability of this molecule to interact with and neutralize polycationic peptides in vivo, suggesting that this is a prime role of endogenous heparin. The lack of effect of exogenous heparin on acute inflammatory responses induced by **allergen**, suggests that cationic proteins are unlikely to be primary mediators of the **allergen**-induced PE or PMN accumulation.

L29 ANSWER 2 OF 13 MEDLINE on STN
ACCESSION NUMBER: 2001699150 MEDLINE
DOCUMENT NUMBER: PubMed ID: 11724756
TITLE: Therapeutic potential of a novel synthetic selectin blocker, OJ-R9188, in **allergic** dermatitis.
AUTHOR: Ikegami-Kuzuhara A; Yoshinaka T; Ohmoto H; Inoue Y; Saito T
CORPORATE SOURCE: R&D Laboratories, Nippon Organon K.K., 5-90. Tomobuchi-cho 1-chome Miyakojima-ku, Osaka 534-0016, Japan.. Kuzuhara.Akemi@organon-oka.akzonobel.nl
SOURCE: British journal of pharmacology, (2001 Dec) 134 (7) 1498-504. Journal code: 7502536. ISSN: 0007-1188.
PUB. COUNTRY: England: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200201
ENTRY DATE: Entered STN: 20011219
Last Updated on STN: 20020125
Entered Medline: 20020114

AB 1. We investigated the ability of a newly synthesized sugar derivative, OJ-R9188, [N-(2-tetradecylhexadecanoyl)-O-(L-alpha-fucofuranosyl)-D-seryl]-L-glutamic acid 1-methylamide 5-L-arginine salt, to block binding of selectins to their ligands in vitro and inhibit the infiltration of leukocytes in vivo. 2. OJ-R9188 prevented the binding of human E-, P- and L-selectin-IgG fusion proteins to immobilized sialyl Lewis(x) (sLe(x))-pentasaccharide glycolipid, with IC(50) values of 4.3, 1.3, and 1.2 microM, respectively. 3. In a mouse model of thioglycollate-induced peritonitis, OJ-R9188 at 10 mg kg(-1), i.v. inhibited neutrophil accumulation in the peritoneal cavity. In the IgE-mediated skin reaction, OJ-R9188 at 3 and 10 mg kg(-1), i.v. significantly inhibited extravasation

of neutrophils and eosinophils into the inflammatory sites and at 10 mg kg(-1), i.v. also inhibited infiltration caused by picryl chloride-induced delayed-type hypersensitivity in mice. These results suggest that OJ-R9188 may be a useful selectin blocker, with activity against human and mouse E-, P- and L-selectins in vitro and in vivo, and that blocking selectin-sLe(x) binding is a promising strategy for the treatment of **allergic** skin diseases.

L29 ANSWER 3 OF 13 MEDLINE on STN
ACCESSION NUMBER: 97279844 MEDLINE
DOCUMENT NUMBER: PubMed ID: 9134218
TITLE: The effect of the selectin binding polysaccharide **fucoidin** on eosinophil recruitment in vivo.
AUTHOR: Teixeira M M; Hellewell P G
CORPORATE SOURCE: Imperial College School of Medicine, National Heart and Lung Institute, London.
SOURCE: British journal of pharmacology, (1997 Mar) 120 (6) 1059-66.
Journal code: 7502536. ISSN: 0007-1188.
PUB. COUNTRY: ENGLAND: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199708
ENTRY DATE: Entered STN: 19970908
Last Updated on STN: 19970908
Entered Medline: 19970827

AB 1. In order to accumulate at sites of inflammation, leukocytes initially roll on endothelial cells of postcapillary venules before becoming firmly attached. This process of rolling is mediated by selectins which bind to carbohydrate counter-ligands present on the surface of both leukocytes and endothelial cells. The polysaccharide **fucoidin** has been previously shown to inhibit leukocyte rolling in the mesenteric circulation and to reduce neutrophil accumulation in the skin and meninges in experimental inflammation. 2. In the present study we have assessed the effects of **fucoidin** on eosinophil function in vitro and eosinophil accumulation at sites of inflammation in guinea-pig skin. 3. At concentrations of up to 1200 micrograms ml-1, **fucoidin** inhibited phorbol myristate acetate (PMA)-induced eosinophil homotypic aggregation by up to 60% but had no inhibitory effect on PMA-induced eosinophil adhesion to serum-coated plates. 4. **Fucoidin** effectively reduced the binding of the anti-L-selectin mAb MEL-14 to guinea-pig eosinophils. Binding of a P-selectin-IgG chimera to eosinophils was also partially inhibited by **fucoidin**, but binding of an anti-CD18 or an anti-VLA-4 mAb were unaffected. 5. When given systemically to guinea-pigs, **fucoidin** suppressed 111In-labelled eosinophil recruitment to sites of **allergic** inflammation. 111In-labelled eosinophil accumulation induced by platelet-activating factor (PAF) and zymosan-activated plasma (as a source of C5a des Arg) was also inhibited. 6. These results demonstrate a role for **fucoidin**-sensitive selectins in mediating eosinophil recruitment in vivo.

L29 ANSWER 4 OF 13 MEDLINE on STN
ACCESSION NUMBER: 97228143 MEDLINE
DOCUMENT NUMBER: PubMed ID: 9091581
TITLE: The association between alpha4-integrin, P-selectin, and E-selectin in an **allergic** model of inflammation.
AUTHOR: Kanwar S; Bullard D C; Hickey M J; Smith C W; Beaudet A L; Wolitzky B A; Kubes P
CORPORATE SOURCE: Department of Medical Physiology, University of Calgary, Alberta, Canada.
CONTRACT NUMBER: AI-32177 (NIAID)
GM-15483 (NIGMS)
HL-42550 (NHLBI)
SOURCE: Journal of experimental medicine, (1997 Mar 17) 185 (6) 1077-87.
Journal code: 2985109R. ISSN: 0022-1007.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199704
ENTRY DATE: Entered STN: 19970422
Last Updated on STN: 19970422
Entered Medline: 19970410

AB In this study, we examined the relationship between the endothelial selectins (P-selectin and E-selectin) and whether they are critical for

alpha4-integrin-dependent leukocyte recruitment in inflamed (late phase response), cremasteric postcapillary venules. Animals were systemically sensitized and 2 wk later challenged intrascrotally with chicken ovalbumin. Leukocyte rolling flux, adhesion, and emigration were assessed at baseline and 4 and 8 h postantigen challenge. There was a significant increase in leukocyte rolling flux, adhesion, and emigration in sensitized and challenged mice at both 4 and 8 h. At 8 h, the increase in leukocyte rolling flux was approximately 50% inhibitable by an anti-alpha4-integrin antibody, 98% inhibitable by **fucoidin** (a selectin-binding carbohydrate), and 100% inhibitable by an anti-P-selectin antibody. P-selectin-deficient animals displayed no leukocyte rolling or adhesion at 8 h after challenge. However, at 8 h there were many emigrated leukocytes in the perivascular space suggesting P-selectin-independent rolling at an earlier time point. Indeed, at 4 h postantigen challenge in P-selectin-deficient mice, there was increased leukocyte rolling, adhesion, and emigration. The rolling in the P-selectin-deficient mice at 4 h was largely alpha4-integrin dependent. However, there was an essential E-selectin-dependent component inasmuch as an anti-E-selectin antibody completely reversed the rolling, and in E-selectin and P-selectin double deficient mice rolling, adhesion and emigration were completely absent. These results illustrate that P-selectin underlies all of the antigen-induced rolling with a brief transient contribution from E-selectin in the P-selectin-deficient animals. Finally, the antigen-induced alpha4-integrin-mediated leukocyte recruitment is entirely dependent upon endothelial selectins.

L29 ANSWER 5 OF 13 EMBASE COPYRIGHT 2005 ELSEVIER INC. ALL RIGHTS RESERVED. on STN

ACCESSION NUMBER: 2004433670 EMBASE
TITLE: Blocking endothelial adhesion molecules: A potential therapeutic strategy to combat atherogenesis.
AUTHOR: Lutters B.C.H.; Leeuwenburgh M.A.; Appeldoorn C.C.M.; Molenaar T.J.M.; Van Berkel T.J.C.; Biessen E.A.L.
CORPORATE SOURCE: E.A.L. Biessen, Division of Biopharmaceutics, Leiden University, PO Box 9502, 2300 RA Leiden, Netherlands. biessen@lacdr.leidenuniv.nl
SOURCE: Current Opinion in Lipidology, (2004) 15/5 (545-552). Refs: 66
ISSN: 0957-9672 CODEN: COPLEU
COUNTRY: United Kingdom
DOCUMENT TYPE: Journal; General Review
FILE SEGMENT: 005 General Pathology and Pathological Anatomy
018 Cardiovascular Diseases and Cardiovascular Surgery
030 Pharmacology
037 Drug Literature Index
038 Adverse Reactions Titles
LANGUAGE: English
SUMMARY LANGUAGE: English

AB Purpose of review: This review provides a concise update of the involvement of endothelial adhesion molecules in atherogenesis, an overview of current advances in the development of adhesion molecule blocking agents, as well as an insight into the potential of these molecules in cardiovascular therapy. Recent findings: As endothelial adhesion molecules are deemed to play an important role in the development and progression of atherosclerotic lesions, they are interesting targets for therapeutic intervention in this process. In particular, P-selectin and vascular cell adhesion molecule 1 are widely considered to hold promise in this regard. Current research efforts centre on the design of agents that directly block the interaction of the receptor with its ligand (e.g. soluble P-selectin glycoprotein ligand 1, blocking antibodies, EWVD-based peptides) or that interfere with their synthesis (e.g. antisense oligonucleotides) or their regulatory control by nuclear factor kappa B or peroxisome proliferator-activated receptor gamma. Furthermore, adhesion molecules have been exploited as a target for the specific delivery of drug carriers (e.g. biodegradable particles with entrapped dexamethasone) or therapeutic compounds (e.g. dexamethasone) to the plaque. All approaches have been shown to be effective in blocking adhesion molecule function in in-vitro studies and in-vivo models for inflammation or atherosclerosis. Summary: Although the field has achieved considerable progress in recent years, leading to the development of a number of interesting leads, final proof of their efficacy in cardiovascular therapy is eagerly awaited. .COPYRGT. 2004 Lippincott Williams & Wilkins.

L29 ANSWER 6 OF 13 EMBASE COPYRIGHT 2005 ELSEVIER INC. ALL RIGHTS RESERVED. on STN

ACCESSION NUMBER: 89115457 EMBASE
DOCUMENT NUMBER: 1989115457

TITLE: Inhibition of passive **allergic** encephalomyelitis by sulfated polysaccharides.
AUTHOR: Willenborg D.O.; Parish C.R.
CORPORATE SOURCE: Neurosciences Research Unit, Royal Canberra Hospital, Australian National University, Canberra, ACT, Australia
SOURCE: Annals of the New York Academy of Sciences, (1988) 540/- (543-545).
ISSN: 0077-8923 CODEN: ANYAA
COUNTRY: United States
DOCUMENT TYPE: Journal
FILE SEGMENT: 008 Neurology and Neurosurgery
026 Immunology, Serology and Transplantation
030 Pharmacology
037 Drug Literature Index
LANGUAGE: English

L29 ANSWER 7 OF 13 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2004:342072 CAPLUS
DOCUMENT NUMBER: 141:133376
TITLE: Physiological function of mekabu **fucoidan** extracted from sporophyll of Undaria pinnatifida
AUTHOR(S): Nakano, Takahisa
CORPORATE SOURCE: Dep. of Health Care, Riken Vitamin Co., Ltd., Japan
SOURCE: Food Style 21 (2004), 8(4), 50-54
CODEN: FSTYFF; ISSN: 1343-9502
PUBLISHER: Shokuhin Kagaku Shinbunsha
DOCUMENT TYPE: Journal; General Review
LANGUAGE: Japanese
AB A review, discussing the action mechanism and antitumor, antiviral, and antiallergic effects of mekabu **fucoidan** extracted from sporophyll of Undaria pinnatifida.

L29 ANSWER 8 OF 13 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2003:823305 CAPLUS
DOCUMENT NUMBER: 139:307039
TITLE: Antiallergic compositions containing **fucoidan** and Ilex latifolia extracts, and foods containing them
INVENTOR(S): Tani, Hisanori; Noguchi, Hiroyuki; Oishi, Kazufumi; Fujioka, Ritsuko
PATENT ASSIGNEE(S): Tanglewood K. K., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003300887	A2	20031021	JP 2002-104094	20020405
PRIORITY APPLN. INFO.:			JP 2002-104094	20020405

AB The compns. comprise IgE formation-inhibiting **fucoidan** or **fucoidan**-like powders from seaweeds and histamine release-inhibiting I. latifolia extract powders. The compns. are useful for control of type I **allergy**.

L29 ANSWER 9 OF 13 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2001:473896 CAPLUS
DOCUMENT NUMBER: 136:69162
TITLE: Novel physiological functions of **fucoidan**
AUTHOR(S): Tani, Hisanori; Ohishi, Hifumi
CORPORATE SOURCE: Kyodo Milk Production K. K., Japan
SOURCE: New Food Industry (2001), 43(5), 6-10
CODEN: NYFIAM; ISSN: 0547-0277
PUBLISHER: Shokuhin Shizai Kenkyukai
DOCUMENT TYPE: Journal; General Review
LANGUAGE: Japanese
AB A review on physiol. functions of **fucoidan**, covering the antiallergic effect, and serum lipid-improving effect through activation of lipoprotein lipase.

L29 ANSWER 10 OF 13 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2001:152496 CAPLUS
DOCUMENT NUMBER: 134:198038
TITLE: Remedies containing **fucoidan** and/or its decomposition product
INVENTOR(S): Tominaga, Takanari; Yamashita, Syusaku; Mizutani, Shigetoshi; Sagawa, Hiroaki; Kato, Ikunoshin

PATENT ASSIGNEE(S): Takara Shuzo Co., Ltd., Japan
SOURCE: PCT Int. Appl., 73 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001013925	A1	20010301	WO 2000-JP5489	20000817
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
AU 2000065934	A5	20010319	AU 2000-65934	20000817
EP 1226826	A1	20020731	EP 2000-953450	20000817
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL				

PRIORITY APPLN. INFO.: JP 1999-234262 A 19990820
JP 2000-69223 A 20000313
WO 2000-JP5489 W 20000817

AB The invention relates to remedies or preventives for diseases with a need for the regulation of the production of cytokines, diseases with a need for the production of nitrogen monoxide or **allergic** diseases characterized by containing as the active ingredient **fucoidan** and/or its decomposition product; and foods, drinks or feeds for regulating the production of cytokines, foods, drinks or feeds for inducing the production of nitrogen monoxide, antiallergic foods, drinks or feeds, etc. containing **fucoidan** and/or its decomposition product.

REFERENCE COUNT: 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L29 ANSWER 11 OF 13 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1999:65301 CAPLUS
DOCUMENT NUMBER: 130:115007
TITLE: Skin-activating agents and anti-**allergy** agents containing **fucoidan** extracted from seaweed
INVENTOR(S): Miyanohara, Tsuneo; Ihata, Shinya; Takita, Yahiro
PATENT ASSIGNEE(S): Lion Corp., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 14 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 11021247	A2	19990126	JP 1997-189249	19970630

PRIORITY APPLN. INFO.: JP 1997-189249 19970630

AB The agents contain **fucoidan** extracted from Heterochordaria, Nemacystus, Ecklonia, Lessonia, Macrocystis, Fucus, Ascophyllum, and/or Durvillea sp. **Fucoidan** extracted from F. vesiculosus remarkably increased formation of hyaluronic acid by rat keratinocyte.

L29 ANSWER 12 OF 13 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1998:207280 CAPLUS
DOCUMENT NUMBER: 128:275101
TITLE: Gas and gaseous precursor filled microspheres as topical and subcutaneous delivery vehicles
INVENTOR(S): Unger, Evan C.; Matsunaga, Terry O.; Yellowhair, David
PATENT ASSIGNEE(S): Imarx Pharmaceutical Corp., USA
SOURCE: U.S., 40 pp., Cont.-in-part of U.S. Ser. No. 307,305.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 21
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE

US 5733572	A	19980331	US 1994-346426		19941129
US 5088499	A	19920218	US 1990-569828		19900820
WO 9109629	A1	19910711	WO 1990-US7500		19901219
W: CA, JP					
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LU, NL, SE					
AT 180170	E	19990615	AT 1991-902857		19901219
ES 2131051	T3	19990716	ES 1991-902857		19901219
JP 3309356	B2	20020729	JP 1991-503276		19901219
JP 05502675	T2	19930513			
US 5228446	A	19930720	US 1991-717084		19910618
WO 9222247	A1	19921223	WO 1992-US2615		19920331
W: AU, CA, JP					
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LU, MC, NL, SE					
AU 9220020	A1	19930112	AU 1992-20020		19920331
AU 667471	B2	19960328			
JP 06508364	T2	19940922	JP 1993-500847		19920331
JP 3456584	B2	20031014			
EP 616508	A1	19940928	EP 1992-912456		19920331
EP 616508	B1	20010718			
EP 616508	B2	20040929			
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, MC, NL, SE					
AT 203148	E	20010815	AT 1992-912456		19920331
ES 2159280	T3	20011001	ES 1992-912456		19920331
US 5469854	A	19951128	US 1993-76239		19930611
US 5580575	A	19961203	US 1993-76250		19930611
US 5348016	A	19940920	US 1993-88268		19930707
US 5542935	A	19960806	US 1993-160232		19931130
US 5585112	A	19961217	US 1993-159687		19931130
US 5769080	A	19980623	US 1994-199462		19940222
WO 9428874	A1	19941222	WO 1994-US5633		19940519
W: AU, CA, CN, JP					
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE					
US 5773024	A	19980630	US 1994-307305		19940916
CA 2177713	AA	19950608	CA 1994-2177713		19941130
WO 9515118	A1	19950608	WO 1994-US13817		19941130
W: AU, CA, CN, JP					
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE					
EP 740528	A1	19961106	EP 1995-908414		19941130
EP 740528	B1	20030326			
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, MC, NL, PT, SE					
JP 09506098	T2	19970617	JP 1995-515763		19941130
AT 235228	E	20030415	AT 1995-908414		19941130
US 5571497	A	19961105	US 1995-468056		19950606
CN 1180310	A	19980429	CN 1996-193069		19960327
CN 1102045	B	20030226			
US 6001335	A	19991214	US 1996-665719		19960618
US 5935553	A	19990810	US 1996-758179		19961125
US 6743779	B1	20040601	US 1997-841169		19970429
US 5985246	A	19991116	US 1997-888426		19970708
AU 9856271	A1	19980507	AU 1998-56271		19980224
AU 713127	B2	19991125			
AU 9888405	A1	19981203	AU 1998-88405		19981012
AU 731072	B2	20010322			
HK 1013625	A1	20000420	HK 1998-114978		19981223
AU 9910043	A1	19990304	AU 1999-10043		19990104
GR 3036877	T3	20020131	GR 2001-401740		20011011
PRIORITY APPLN. INFO.:			US 1989-455707	B2	19891222
			US 1990-569828	A2	19900820
			US 1991-716899	B2	19910618
			US 1991-717084	A2	19910618
			US 1993-76239	A2	19930611
			US 1993-76250	A2	19930611
			US 1993-159674	B2	19931130
			US 1993-159687	A2	19931130
			US 1993-160232	A2	19931130
			US 1994-307305	A2	19940916
			WO 1990-US7500	W	19901219
			US 1991-716793	A	19910618
			US 1991-750877	A3	19910826
			US 1992-818069	A3	19920108
			WO 1992-US2615	A	19920331
			US 1992-967974	A3	19921027
			US 1993-17683	A3	19930212
			US 1993-18112	B3	19930217
			US 1993-85608	A3	19930630
			US 1993-88268	A3	19930707
			US 1993-163039	A3	19931206
			US 1994-212553	B2	19940311

	AU 1994-70416	A3 19940519
	US 1994-346426	A 19941129
	AU 1995-21850	A3 19941130
	WO 1994-US13817	W 19941130
	US 1995-395683	A3 19950228
	US 1995-468056	A3 19950606
	US 1995-471250	A3 19950606
	US 1996-640554	B2 19960501
	US 1996-665719	A3 19960618
	US 1997-785661	B2 19970117

AB Gas and gaseous precursor filled microspheres, and foams provide novel topical and s.c. delivery vehicles for various active ingredients, including drugs and cosmetics. Gas and gaseous precursor filled microcapsules were prepared from dipalmitoylphosphatidylcholine.

REFERENCE COUNT: 314 THERE ARE 314 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L29 ANSWER 13 OF 13 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1998:176295 CAPLUS
DOCUMENT NUMBER: 128:226245
TITLE: **Allergy** inhibitors containing **fucoidan** and **allergy** treatment with oral dosing of **fucoidan**
INVENTOR(S): Oishi, Kazufumi; Tani, Hisanori; Hattori, Takashi
PATENT ASSIGNEE(S): Kyodo Milk Industry Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 4 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 10072362	A2	19980317	JP 1996-245441	19960829
PRIORITY APPLN. INFO.:			JP 1996-245441	19960829

AB Therapeutic and prophylactic agents for **allergic** diseases contain **fucoidan** (I) or **fucoidan**-like substances. **Allergic** diseases is treated or prevented by orally administering I or **fucoidan**-like substance. I, extracted from Laminaria diabolica, suppressed formations of interleukin 4 and IgE upon antigen challenge to alum-sensitized mice. I also inhibited compound 48/80-induced histamine release from rat mast cells.

L26 ANSWER 1 OF 3 MEDLINE on STN
ACCESSION NUMBER: 2000171558 MEDLINE
DOCUMENT NUMBER: PubMed ID: 10706585
TITLE: Interleukin-4 augments acetylated LDL-induced cholesterol esterification in macrophages.
AUTHOR: Cornicelli J A; Butteiger D; Rateri D L; Welch K; Daugherty A
CORPORATE SOURCE: Department of Vascular Diseases, Parke Davis, 2800 Plymouth Road, Ann Arbor, MI 48106, USA.
CONTRACT NUMBER: HL 55487 (NHLBI)
SOURCE: Journal of lipid research, (2000 Mar) 41 (3) 376-83. Journal code: 0376606. ISSN: 0022-2275.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200005
ENTRY DATE: Entered STN: 20000518
Last Updated on STN: 20000518
Entered Medline: 20000509

AB Activated subpopulations of lymphocytes and mast cells have been detected in atherosclerotic lesions. Interleukin-4 (IL-4) is a prominent cytokine released during activation of both cell types and its transcripts have been detected in both human and mouse atherosclerotic lesions. To define whether this local release of IL-4 influences macrophage lipid metabolism, we examined the effects of this cytokine on intracellular cholesterol esterification during incubation with modified low density lipoprotein (LDL). IL-4 greatly augmented cholesterol esterification induced by acetylated LDL (AcLDL) in both mouse peritoneal macrophages and the murine macrophage cell line, J774. This augmentation was maximal at a concentration of 1 ng/ml after incubation for 48 h. This was not a generalized effect on lipoprotein metabolism as IL-4 had no effect on cholesterol esterification in the presence of either LDL or **beta**-VLDL. Determination of binding isotherms demonstrated that IL-4 increased the number of cell surface binding sites for AcLDL. The IL-4-augmented AcLDL-induced cholesterol esterification was attenuated by the scavenger receptor class A (SR-A) antagonist, **fucoidan**, and the anti-mouse SR-A monoclonal antibody, 2F8. These data, combined with the known receptor specificity of AcLDL interactions, imply a role of SR-A in the IL-4 induced responses. Two cytokines that have been demonstrated previously to down-regulate SR-A, TNF-alpha and **TGF-beta**, antagonized the IL-4-induced augmentation of cholesterol esterification. Therefore, local release of IL-4 within atherosclerotic lesions could have a profound effect on macrophage lipid metabolism and the subsequent atherogenic process.

L26 ANSWER 2 OF 3 EMBASE COPYRIGHT 2005 ELSEVIER INC. ALL RIGHTS RESERVED. on STN
ACCESSION NUMBER: 95189323 EMBASE
DOCUMENT NUMBER: 1995189323
TITLE: Erratum: 'Accumulation of fibronectin in articular cartilage explants cultured with **TGF.beta**.1 and **fucoidan**' (Archives of Biochemistry and Biophysics Volume 316, 1 (1995)).
AUTHOR: Burton-Wurster N.; Zhang D.-W.; Lust G.
SOURCE: Archives of Biochemistry and Biophysics, (1995) 319/2 (579). ISSN: 0003-9861 CODEN: ABBIA4
COUNTRY: United States
DOCUMENT TYPE: Journal; Errata
FILE SEGMENT: 029 Clinical Biochemistry
LANGUAGE: English

L26 ANSWER 3 OF 3 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1995:620266 CAPLUS
TITLE: Accumulation of Fibronectin in Articular Cartilage Explants Cultured with **TGFβ** 1 and **Fucoidan**
AUTHOR(S): Burton-Wurster, Nancy; Zhang, Dai-wei; Lust, George
SOURCE: Archives of Biochemistry and Biophysics (1995), 319(2), 579 CODEN: ABBIA4; ISSN: 0003-9861
PUBLISHER: Academic
DOCUMENT TYPE: Journal; Errata
LANGUAGE: English
AB Unavailable

L21 ANSWER 25 OF 134 MEDLINE on STN
ACCESSION NUMBER: 1998393425 MEDLINE
DOCUMENT NUMBER: PubMed ID: 9726824
TITLE: Increased vascular **endothelial** growth factor (VEGF) and **transforming growth factor beta** (TGFbeta) in experimental **autoimmune** uveoretinitis: upregulation of VEGF without neovascularization.
AUTHOR: Vinores S A; Chan C C; Vinores M A; Matteson D M; Chen Y S; Klein D A; Shi A; Ozaki H; Campochiaro P A
CORPORATE SOURCE: The Wilmer Ophthalmologic Institute, Johns Hopkins University School of Medicine, Baltimore, MD 21287-9289, USA.
CONTRACT NUMBER: EY05951 (NEI)
EY10017 (NEI)
SOURCE: Journal of neuroimmunology, (1998 Aug 14) 89 (1-2) 43-50. Journal code: 8109498. ISSN: 0165-5728.
PUB. COUNTRY: Netherlands
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199809
ENTRY DATE: Entered STN: 19980917
Last Updated on STN: 19980917
Entered Medline: 19980910

AB Experimental **autoimmune** uveoretinitis (EAU) was induced in Lewis rats and B10.A mice by immunization with S-antigen (S-Ag) to study the potential roles of vascular **endothelial** growth factor (VEGF) and the beta1 and beta2 isoforms of **transforming growth factor** (TGFbeta1 and TGFbeta2) during the progression of the disease. VEGF has been implicated as an angiogenic factor in ischemic retinopathies; however, Lewis rats developing EAU have high levels of VEGF in the retina, but no neovascularization. In the present study, immunohistochemical staining for VEGF, TGFbeta1 and TGFbeta2 was performed on the retinas of Lewis rats developing EAU or with oxygen-induced ischemic retinopathy. In rats immunized with S-antigen, a marked upregulation of VEGF was immunohistochemically visualized from the inner nuclear layer to the inner limiting membrane prior to blood-retinal barrier (BRB) failure and lymphocytic infiltration. VEGF is normally induced by hypoxia and its induction leads to neovascularization. Coincident with the increase in VEGF, there was increased immunoreactivity for TGFbeta1 and TGFbeta2 within the same layers of the retina. In contrast, rats with ischemic retinopathy and retinal neovascularization showed only a modest increase in VEGF immunoreactivity, which is largely confined to retinal ganglion cells and inner retinal vessels, and little or no increase in TGFbeta1 or TGFbeta2. In addition, in mice developing EAU, which does not have an abrupt onset as it does in rats and may involve neovascularization, a comparable upregulation of VEGF in the inner retina to that seen in rats developing EAU occurs with no increase in TGFbeta1 or TGFbeta2. Since TGFbeta can inhibit **endothelial** cell **proliferation**, it is likely that an increase in TGFbeta may prevent VEGF from exerting its **endothelial** growth activity in the rat EAU model, but VEGF may be operative in inducing BRB failure. These data suggest that there is a complex interaction among growth factors in the retina and that retinal neovascularization may require an imbalance between stimulatory and inhibitory factors.

L21 ANSWER 26 OF 134 MEDLINE on STN
ACCESSION NUMBER: 1998129402 MEDLINE
DOCUMENT NUMBER: PubMed ID: 9469500
TITLE: Relationships of cell **proliferation** and expression of integrin subunits and type I collagen in skin **fibroblasts** with renal lesions in patients with IDDM.
AUTHOR: Jin D K; Kim Y; Mauer M; Fioretto P; Vats A; Fish A J
CORPORATE SOURCE: Department of Pediatrics, Sung Kyun Kwan University, College of Medicine, Seoul, Korea.
CONTRACT NUMBER: AI010694 (NIAID)
DK13083 (NIDDK)
MO1-RR0046 (NCRR)
+
SOURCE: American journal of kidney diseases : official journal of the National Kidney Foundation, (1998 Feb) 31 (2) 293-300. Journal code: 8110075. ISSN: 0272-6386.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English

FILE SEGMENT: Priority Journals
ENTRY MONTH: 199802
ENTRY DATE: Entered STN: 19980306
Last Updated on STN: 19980306
Entered Medline: 19980226

AB Previous studies have shown that cultured skin **fibroblasts** (SFs) from insulin-dependent diabetic mellitus (IDDM) patients with diabetic nephropathy (DN) exhibit both increased **proliferation** and Na+/H+ antiporter activity. The present study correlated the growth rate and mRNA expression of integrin subunits, extracellular matrix molecules, and **transforming growth factor-beta** in cultured SFs, with the biopsy determined rate of development of DN lesions ranging from slow to rapid in nine IDDM patients. These varying rates of development of DN lesions were expressed by a mesangial expansion score as estimated by the rate of change in mesangial fraction volume per year. Cultured SF **proliferation** by direct cell counts positively correlated with mesangial expansion score ($r = 0.65$; $P < 0.05$). Expression of cultured SF alpha3 integrin subunit mRNA levels, as well as type I collagen mRNA ($P < 0.05$ for both), but not **transforming growth factor-beta** mRNA levels (Northern blot analysis), were also positively correlated with mesangial expansion score. We postulate that these observations of correlations between activities of cultured SFs and the rate of progression of DN lesions may be predictive of the risk to develop clinical DN in IDDM, may be in part genetically regulated, and may be of pathogenetic importance.

L21 ANSWER 27 OF 134 MEDLINE on STN
ACCESSION NUMBER: 97260155 MEDLINE
DOCUMENT NUMBER: PubMed ID: 9106250
TITLE: Neurotrophins and their receptors in nerve injury and repair.
AUTHOR: Ebadi M; Bashir R M; Heidrick M L; Hamada F M; Refaey H E; Hamed A; Helal G; Baxi M D; Cerutis D R; Lassi N K
CORPORATE SOURCE: Department of Pharmacology, University of Nebraska College of Medicine, Omaha 68198-6260, USA.
CONTRACT NUMBER: NS34566 (NINDS)
SOURCE: Neurochemistry international, (1997 Apr-May) 30 (4-5) 347-74. Ref: 240
Journal code: 8006959. ISSN: 0197-0186.
PUB. COUNTRY: ENGLAND: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
General Review; (REVIEW)
(REVIEW, ACADEMIC)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199707
ENTRY DATE: Entered STN: 19970805
Last Updated on STN: 19980206
Entered Medline: 19970724

AB Cytokines are a heterogenous group of polypeptide mediators that have been associated with activation of numerous functions, including the immune system and inflammatory responses. The cytokine families include, but are not limited to, interleukins (IL-I alpha, IL-I **beta**, ILIra and IL-2-IL-15), chemokines (IL-8/ NAP-I, NAP-2, MIP-I alpha and **beta** , MCAF/MCP-1, MGSA and RANTES), tumor necrosis factors (TNF-alpha and TNF-**beta**), interferons (INF-alpha, **beta** and gamma), colony stimulating factors (G-CSF, M-CSF, GM-CSF, IL-3 and some of the other ILs), growth factors (EGF, FGF, PDGF, **TGF** alpha, **TGF** **beta** and ECGF), neuropoietins (LIF, CNTF, OM and IL-6), and neurotrophins (BDNF, NGF, NT-3-NT-6 and GDNF). The neurotrophins represent a family of survival and differentiation factors that exert profound effects in the central and peripheral nervous system (PNS). The neurotrophins are currently under investigation as therapeutic agents for the treatment of neurodegenerative disorders and nerve injury either individually or in combination with other trophic factors such as ciliary neurotrophic factor (CNTF) or **fibroblast** growth factor (FGF). Responsiveness of neurons to a given neurotrophin is governed by the expression of two classes of cell surface receptor. For nerve growth factor (NGF), these are p75NTR (p75) and p140trk (referred to as trk or trkA), which binds both BDNF and neurotrophin (NT)-4/5, and trkC receptor, which binds only NT-3. After binding ligand, the neurotrophin-receptor complex is internalized and retrogradely transported in the axon to the soma. Both receptors undergo ligand-induced dimerization, which activates multiple signal transduction pathways. These include the ras-dependent pathway utilized by trk to mediate neurotrophin effects such as survival and differentiation. Indeed, cellular diversity in the nervous system evolves from the concerted processes of cell **proliferation**, differentiation, migration, survival, and synapse formation. Neural

adhesion and extracellular matrix molecules have been shown to play crucial roles in axonal migration, guidance, and growth cone targeting. Proinflammatory cytokines, released by activated macrophages and monocytes during infection, can act on neural targets that control thermogenesis, behavior, and mood. In addition to induction of fever, cytokines induce other biological functions associated with the acute phase response, including hypophagia and sleep. Cytokine production has been detected within the central nervous system as a result of brain injury, following stab wound to the brain, during viral and bacterial infections (AIDS and meningitis), and in neurodegenerative processes (**multiple sclerosis** and Alzheimer's disease). Novel cytokine therapies, such as anticytokine antibodies or specific receptor antagonists acting on the cytokine network may provide an optimistic feature for treatment of **multiple sclerosis** and other diseases in which cytokines have been implicated.

L21 ANSWER 28 OF 134 MEDLINE on STN
ACCESSION NUMBER: 97126763 MEDLINE
DOCUMENT NUMBER: PubMed ID: 8971657
TITLE: Glucose modulates growth of gingival **fibroblasts** and periodontal ligament cells: correlation with expression of basic **fibroblast** growth factor.
AUTHOR: Ohgi S; Johnson P W
CORPORATE SOURCE: Department of Stomatology, School of Dentistry, University of California, San Francisco 94143-0650, USA.
SOURCE: Journal of periodontal research, (1996 Nov) 31 (8) 579-88. Journal code: 0055107. ISSN: 0022-3484.
PUB. COUNTRY: Denmark
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Dental Journals; Priority Journals
ENTRY MONTH: 199703
ENTRY DATE: Entered STN: 19970327
Last Updated on STN: 19970327
Entered Medline: 19970318

AB **Diabetes** mellitus is a systemic disease with profound effects on oral health and periodontal wound healing. Uncontrolled **diabetes** adversely affects surgical wound healing and is often associated with abnormal **proliferation** of **fibroblasts**, excessive angiogenesis and poor bone regeneration. Human gingival **fibroblasts** and periodontal ligament cells from both diabetics and non-diabetics were evaluated for growth responses following culture in 20 mM glucose, a concentration compatible with blood glucose levels in uncontrolled diabetics. Gingival **fibroblasts** derived from 9 non-diabetic patients and 3 insulin-dependent diabetics either **proliferated** or showed little change of growth in elevated glucose. Enhanced **proliferation** was observed following 1 wk of culture in glucose. Growth of periodontal ligament cells from 5 non-diabetic patients was inhibited by 20 mM glucose. **Fibroblasts** that were markedly growth stimulated were probed for expression of basic **fibroblast** growth factor (bFGF) using a reverse-transcribed polymerase chain reaction (RT-PCR). Results indicate that **fibroblasts** exhibiting the greatest increase in growth in response to high glucose also exhibited increased expression of bFGF. No changes were observed in mRNA expression for platelet-derived growth factor-AA, platelet-derived growth factor-BB, insulin-like growth factor and **transforming growth factor-beta** 1.
Mitogenic effects induced by the cytosol of **fibroblasts** exhibiting increases of growth in 20 mM glucose were abrogated by neutralizing antibodies to bFGF. In addition, some periodontal ligament cells that were growth inhibited by high glucose had reduced expression of bFGF. These data suggest that bFGF may play a role in the abnormal wound healing associated with periodontal surgery of uncontrolled diabetics.

L21 ANSWER 29 OF 134 MEDLINE on STN
ACCESSION NUMBER: 97126170 MEDLINE
DOCUMENT NUMBER: PubMed ID: 8971094
TITLE: Potential role of an endothelium-specific growth factor, hepatocyte growth factor, on **endothelial** damage in **diabetes**.
AUTHOR: Morishita R; Nakamura S; Nakamura Y; Aoki M; Moriguchi A; Kida I; Yo Y; Matsumoto K; Nakamura T; Higaki J; Ogihara T
CORPORATE SOURCE: Department of Oncology, Biomedical Research Center, Osaka University Medical School, Suita, Japan.
SOURCE: Diabetes, (1997 Jan) 46 (1) 138-42. Journal code: 0372763. ISSN: 0012-1797.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)

LANGUAGE: English
FILE SEGMENT: Abridged Index Medicus Journals; Priority Journals
ENTRY MONTH: 199701
ENTRY DATE: Entered STN: 19970219
Last Updated on STN: 19970219
Entered Medline: 19970124

AB **Endothelial** cells are known to secrete various **antiproliferative** and vasodilating factors. Although injury of **endothelial** cells has been postulated as an initial trigger of the progression of atherosclerosis in patients with **diabetes**, the mechanisms of **endothelial** injury in **diabetes** are not yet clarified. Therefore, it is important to know the effects of high glucose on the factors that may influence **endothelial** cell growth. A novel member of endothelium-specific growth factors, hepatocyte growth factor (HGF), is produced in vascular cells. To investigate the effects of high glucose on vascular cells, we examined 1) the effects of high glucose on **endothelial** cell and vascular smooth muscle cell (VSMC) growth and 2) the effects of high glucose on local HGF production in **endothelial** cell and VSMC. Treatment of human aortic **endothelial** cell with a high concentration of D-glucose, but not mannitol and L-glucose, resulted in a significant decrease in cell number. Interestingly, addition of recombinant HGF attenuated high D-glucose-induced **endothelial** cell death. Therefore, we measured local HGF secretion of **endothelial** cell. Importantly, local HGF production was significantly decreased by high D-glucose treatment. In contrast, high D-glucose treatment resulted in a significant increase in the number of human aortic VSMCs, whereas local HGF production was significantly decreased in accordance with increase in D-glucose concentration. No significant changes in numbers were observed in VSMC treated with high mannitol and L-glucose. We also studied the mechanisms of local HGF suppression by high D-glucose. High D-glucose treatment stimulated **transforming growth factor-beta** (**TGF-beta**) concentration in **endothelial** cell and VSMC. Decreased local vascular HGF production was abolished by addition of anti-**TGF-beta** antibody. As **TGF-beta** inhibited local HGF production in **endothelial** cell and VSMC, increased **TGF-beta** induced by high D-glucose may suppress local HGF production. This study demonstrated that high D-glucose induced **endothelial** cell death, stimulated VSMC growth, and decreased local HGF production through the stimulation of **TGF-beta** production both in **endothelial** cell and VSMC. Overall, decrease in a local **endothelial** stimulant, HGF, by high D-glucose may be a trigger of **endothelial** injury in **diabetes**, potentially resulting in the progression of atherosclerosis.

L21 ANSWER 30 OF 134 MEDLINE on STN
ACCESSION NUMBER: 97043960 MEDLINE
DOCUMENT NUMBER: PubMed ID: 8889031
TITLE: Mechanism of acceleration of wound healing by basic **fibroblast** growth factor in genetically diabetic mice.
AUTHOR: Tanaka E; Ase K; Okuda T; Okumura M; Nogimori K
CORPORATE SOURCE: Pharmacological Laboratory, Central Research Laboratories, Kaken Pharmaceutical Co., Ltd., Kyoto, Japan.
SOURCE: Biological & pharmaceutical bulletin, (1996 Sep) 19 (9) 1141-8.
Journal code: 9311984. ISSN: 0918-6158.
PUB. COUNTRY: Japan
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199702
ENTRY DATE: Entered STN: 19970306
Last Updated on STN: 19970306
Entered Medline: 19970224

AB To elucidate the role of basic **fibroblast** growth factor (bFGF) in the wound healing process, we investigated the ability of the factor to modulate an inflammatory reaction at the wound site and to influence **endothelial** cells and **fibroblasts** in vitro. A single, topical application of bFGF to a full-thickness wound of genetically diabetic mice caused an increase in the volume of wound exudate in a dose-dependent manner. bFGF induced the infiltration of a large number of leukocytes in the wound exudate. **Transforming growth factor-beta** (**TGF-beta**) positive cells, such as macrophages, monocytes and **fibroblasts**, appeared in the granulation tissue in bFGF-treated diabetic mice. These phenomena were comparable to those in normal animals, suggesting that the treatment

with bFGF restored the inflammatory response in wound healing of diabetic mice. The effects of bFGF on cell **proliferation**, migration and angiogenesis were histologically recognized as shown in enhanced granulation tissue formation and neovascularization. It is suggested that bFGF promotes the recruitment of inflammatory cells into the wound site to induce a cascade reaction of growth factors including **TGF-beta** in a wound healing process, and so would accelerate wound healing.

L21 ANSWER 31 OF 134 MEDLINE on STN
ACCESSION NUMBER: 96086278 MEDLINE
DOCUMENT NUMBER: PubMed ID: 7487624
TITLE: Pathologic human vitreous promotes contraction by **fibroblasts**. Implications for **proliferative** vitreoretinopathy.
AUTHOR: Hardwick C; Morris R; Witherspoon D; White M; Feist R; McFarland R; Guidry C
CORPORATE SOURCE: Department of Ophthalmology, University of Alabama at Birmingham, USA.
CONTRACT NUMBER: EYO7033 (NEI)
EYO9536 (NEI)
SOURCE: Archives of ophthalmology, (1995 Dec) 113 (12) 1545-53.
Journal code: 7706534. ISSN: 0003-9950.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Abridged Index Medicus Journals; Priority Journals
ENTRY MONTH: 199512
ENTRY DATE: Entered STN: 19960124
Last Updated on STN: 19960124
Entered Medline: 19951221
AB OBJECTIVE: To establish and quantify the presence of contraction-stimulating activity in pathologic vitreous and correlate this activity with clinical presentation and outcome, especially with **proliferative** vitreoretinopathy. METHODS: Contraction-stimulating activity of vitreous collected during surgery was quantified with a tissue culture assay using **fibroblasts** as target cells. The activity of each sample was correlated with patient history, clinical presentation, risk factors, **proliferative** disease, and postoperative **proliferation**. RESULTS: Pathologic vitreous contained measurable quantities of contraction-stimulating activity and stimulated contraction in vitro, with elevated activities in samples from patients with **proliferative** vitreoretinopathy, epimacular **proliferation**, retinal detachment, retinal defects, pigmented cells in the vitreous, hemorrhage, or **uveitis**. Patients with postoperative **proliferation** had significantly elevated mean activities. CONCLUSIONS: Levels of contraction-stimulating activity in pathologic vitreous correlate with some risk factors for the development of **proliferative** vitreoretinopathy and may ultimately be useful in the assessment of disease severity and the prediction of postoperative **proliferation**.

L21 ANSWER 32 OF 134 MEDLINE on STN
ACCESSION NUMBER: 96083564 MEDLINE
DOCUMENT NUMBER: PubMed ID: 7474940
TITLE: The effects of high glucose on human **endothelial** cell growth and gene expression are not mediated by **transforming growth factor-beta**.
AUTHOR: Cagliero E; Roth T; Taylor A W; Lorenzi M
CORPORATE SOURCE: Schepens Eye Research Institute, Boston, Massachusetts, USA.
CONTRACT NUMBER: EY 09122 (NEI)
SOURCE: Laboratory investigation; a journal of technical methods and pathology, (1995 Nov) 73 (5) 667-73.
Journal code: 0376617. ISSN: 0023-6837.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199512
ENTRY DATE: Entered STN: 19960124
Last Updated on STN: 19960124
Entered Medline: 19951228
AB BACKGROUND: Because accumulation of extracellular matrix is a prominent characteristic of the microangiopathy that complicates long-term **diabetes**, a pathogenetic role for **transforming growth factor beta (TGF-beta**

) is being considered. Having observed that glucose levels mimicking diabetic hyperglycemia induce in vitro **endothelial** cell overexpression of extracellular matrix molecules, decreased replication, and increased levels of **TGF-beta** mRNA, we have examined whether the effects of high glucose are mediated by autocrine **TGF-beta**. EXPERIMENTAL DESIGN: **TGF-beta** levels were measured by bioassay in the media conditioned by human umbilical vein **endothelial** cells cultured in the presence of high (30 mM) or normal (5 mM) glucose concentrations. The effect of high glucose was tested on the **proliferation** of two epithelial cell lines, one (Mv1Lu) exquisitely sensitive to **TGF-beta** and the other (DR mutants) insensitive to the cytokine. To examine whether high glucose and **TGF-beta** affect cellular programs in a similar manner, the effects of high glucose and exogenous **TGF-beta** were compared on **proliferation** and gene expression of **endothelial** cells. RESULTS: Media conditioned by **endothelial** cells cultured in high or normal glucose contained similar amounts of **TGF-beta** (4.9 +/- 3.5 and 3.7 +/- 2.5 ng/10(6) cells, respectively (mean +/- SD)), all in the latent form. The replication of parental Mv1Lu cells and their DR mutants was decreased by high glucose to the same extent. Whereas the inhibitory effect of high glucose on **endothelial** cell replication was reversible, that of **TGF-beta** was not. Both perturbations induced up-regulation of fibronectin expression, but the effects were additive. Only **TGF-beta** induced overexpression of Type IV collagenase. CONCLUSIONS: These combined observations indicate that (a) **endothelial** cells exposed to high glucose do not secrete **TGF-beta** in excess of control cells, (b) there are growth-inhibitory effects of high glucose that are independent of **TGF-beta**, and (c) high glucose and **TGF-beta** exert their effects through distinct pathways and at different loci.

L21 ANSWER 33 OF 134 MEDLINE on STN
ACCESSION NUMBER: 95346541 MEDLINE
DOCUMENT NUMBER: PubMed ID: 7621107
TITLE: Diabetic microvascular complications and growth factors.
AUTHOR: Pfeiffer A; Schatz H
CORPORATE SOURCE: Medizinische Klinik und Poliklinik, Ruhr-Universitat, Bochum, Germany.
SOURCE: Experimental and clinical endocrinology & diabetes : official journal, German Society of Endocrinology [and] German Diabetes Association, (1995) 103 (1) 7-14. Ref: 99
Journal code: 9505926. ISSN: 0947-7349.
PUB. COUNTRY: GERMANY: Germany, Federal Republic of
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
General Review; (REVIEW)
(REVIEW, ACADEMIC)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199508
ENTRY DATE: Entered STN: 19950911
Last Updated on STN: 20000303
Entered Medline: 19950831

AB **Diabetes** mellitus is associated with typical patterns of long term vascular complications which vary with the organ involved. The microvascular kidney disease (Olgemoller and Schleicher, 1993) is characterized by thickening of the capillary basement membranes and increased deposition of extracellular matrix components (ECM), while loss of microvessels with subsequent neovascularisation is predominant in the eye and peripheral nerves. On the other hand macrovascular disease is characterized by accelerated atherosclerosis. These complications are dependent on long term hyperglycemia. Specific biochemical pathways linking hyperglycaemia to microvascular changes were proposed: the polyol pathway (Greene et al., 1987), non-enzymatic glycation of proteins (Brownlee et al., 1988), glucose autooxidation and oxidative stress (Hunt et al., 1990), hyperglycemic pseudohypoxia (Williamson et al., 1993) enhanced activation of protein kinase C by de novo-synthesis of diacyl glycerol (Lee et al., 1989; DeRubertis and Craven 1994) and others. These pathways are not mutually exclusive (Larkins and Dunlop, 1992; Pfeiffer and Schatz, 1992). They may be linked to alterations in the synthesis of growth factors particularly since atherosclerosis and angioneogenesis are associated with increased **proliferation** of **endothelial** and smooth muscle cells. Increased synthesis of ECM components is stimulated by growth factors like **transforming growth factor beta** (**TGF beta**) (Derynck et al., 1984) and insulin-like growth factor I (IGF-I) (Moran et al., 1991). This review will summarize some of the recent evidence for an involvement

of growth factors in diabetic vascular complications and will attempt to assign their emergence in the sequence of events leading to vascular complications.

L21 ANSWER 34 OF 134 MEDLINE on STN
ACCESSION NUMBER: 95339910 MEDLINE
DOCUMENT NUMBER: PubMed ID: 7615019
TITLE: Monocyte-induced cytokine expression in cultured human retinal pigment epithelial cells.
AUTHOR: Jaffe G J; Roberts W L; Wong H L; Yurochko A D; Cianciolo G J
CORPORATE SOURCE: Department of Ophthalmology, Duke University, Durham, NC, USA.
CONTRACT NUMBER: EY09106 (NEI)
SOURCE: Experimental eye research, (1995 May) 60 (5) 533-43. Journal code: 0370707. ISSN: 0014-4835.
PUB. COUNTRY: ENGLAND: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199508
ENTRY DATE: Entered STN: 19950905
Last Updated on STN: 19950905
Entered Medline: 19950818

AB Monocytes and retinal pigment epithelial cells are intimately associated in membranes of eyes with **proliferative** vitreoretinopathy and in certain types of **uveitis**. The goal of this study was to determine whether monocytes modulate cytokine expression in retinal pigment epithelial cells, and if so, to identify the monocyte products responsible for this effect. Cultured human retinal pigment epithelial cells were exposed to varying concentrations of monocyte-conditioned medium from unstimulated human monocytes for 1-48 hr, or from monocytes prestimulated with lipopolysaccharide. mRNA expression of interleukin-1 **beta**, interleukin-6, interleukin-8, melanoma growth stimulating activity/gro alpha and gamma, macrophage colony stimulating factor, **transforming growth factor-beta** 2, basic **fibroblast** growth factor and activin **beta** A chain was determined by reverse transcription polymerase chain reaction. Protein secretion of selected cytokines, interleukin-1 **beta**, interleukin-6, interleukin-8, macrophage colony stimulating factor and **transforming growth factor-beta** 2 was measured in RPE-conditioned medium by ELISA. Retinal pigment epithelial cells constitutively expressed mRNA for interleukin-6, macrophage colony stimulating factor, **transforming growth factor-beta** 2, basic **fibroblast** growth factor and activin **beta** A chain. Interleukin-1 **beta**, melanoma growth stimulating activity/gro alpha and gamma and interleukin-8 were not expressed under basal conditions. Stimulated monocyte-conditioned medium markedly induced mRNA of all cytokines except basic **fibroblast** growth factor and **transforming growth factor-beta** 2 in a dose- and time-dependent manner. Unstimulated monocyte-conditioned medium was a less potent inducing agent, but still enhanced mRNA expression of interleukin-6, interleukin-8 and melanoma growth stimulating activity/gro alpha. Stimulated monocyte-conditioned medium also induced a time-dependent increase in interleukin-6, Interleukin-8, macrophage colony stimulation factor and **transforming growth factor-beta** 2, but not interleukin-1 **beta** protein secretion ($p < 0.05$ for all time points). Neutralizing antibodies to interleukin-1 **beta**, or tumour necrosis factor alpha, but not interleukin-1 alpha, significantly reduced cytokine mRNA expression induced by stimulated monocyte-conditioned medium. The combination of all three neutralizing antibodies almost entirely eliminated monocyte-induced mRNA expression and protein production of all cytokines studied. Activated monocytes secrete a heterogeneous mixture of products that together strongly induce expression of multiple cytokines in human retinal pigment epithelial cells. Most if not all of the inducing effect can be accounted for by interleukin-1 **beta** and tumour necrosis factor alpha. Because cytokines have been implicated in **proliferative** vitreoretinopathy and **uveitis**, monocyte-mediated cytokine expression by RPE cells may serve to initiate and perpetuate these diseases.

L21 ANSWER 35 OF 134 MEDLINE on STN
ACCESSION NUMBER: 95051467 MEDLINE
DOCUMENT NUMBER: PubMed ID: 7525641
TITLE: Uveitogenic T lymphocytes in the rat: pathogenicity vs. lymphokine production, adhesion molecules and surface

antigen expression.
AUTHOR: Savion S; Oddo S; Grover S; Caspi R R
CORPORATE SOURCE: Laboratory of Immunology, National Eye Institute, National Institutes of Health, Bethesda, MD 20892.
SOURCE: Journal of neuroimmunology, (1994 Nov) 55 (1) 35-44.
Journal code: 8109498. ISSN: 0165-5728.
PUB. COUNTRY: Netherlands
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199412
ENTRY DATE: Entered STN: 19950110
Last Updated on STN: 19960129
Entered Medline: 19941228

AB A possible correlation between the pathogenicity of **autoimmune** T cells and their lymphokine production, expression of functional adhesion molecules and expression of some surface antigens was examined. We used four retinal antigen-specific Lewis rat T cell lines and sublines: one specific to the major pathogenic epitope of the human retinal soluble antigen (S-Ag; residues 337-356), and three specific to the major pathogenic epitope of the bovine interphotoreceptor retinoid binding protein (IRBP; residues 1177-1191). The lines have different degrees of uveitogenicity, from highly pathogenic to nonpathogenic. All four T cell lines produced roughly equivalent amounts of interferon-gamma, lymphotoxin/tumor necrosis factor (TNF alpha/**beta**), interleukin-3, interleukin-6 and **transforming growth factor-beta**. Interleukin-4 activity could not be detected. The lines also expressed similar levels of functional adhesion molecules, as measured by binding to cultured rat aorta **endothelial** cells. The nonpathogenic subline, however, was the lowest responder to antigenic stimulation with respect to **proliferation** and interleukin-2 production. Examination of cell surface antigens showed that in contrast to the other lines, the majority of cells in the nonpathogenic subline lacked detectable expression of CD4. No difference was found in the level of expression of the IL-2 receptor and T cell antigen receptor among the four lines. Because CD4 is the restricting element in these lines, reduced CD4 expression in the nonpathogenic subline may at least partially explain its poor response in vitro to antigenic stimulation. All three attributes could be connected to lack of pathogenicity of this line in vivo. These results support the contention that class II-restricted recognition of autoantigen within the neuroretina by uveitogenic T lymphocytes must occur as an initial step in the pathogenesis of EAU. A defect in this step will preclude pathogenesis regardless of some other functional attributes possessed by effector T cells, such as production of inflammatory lymphokines and expression of adhesion molecules.

L21 ANSWER 36 OF 134 MEDLINE on STN
ACCESSION NUMBER: 94267206 MEDLINE
DOCUMENT NUMBER: PubMed ID: 8207222
TITLE: Increased **TGF-beta** and decreased oncogene expression by omega-3 fatty acids in the spleen delays onset of **autoimmune** disease in B/W mice.
AUTHOR: Fernandes G; Bysani C; Venkatraman J T; Tomar V; Zhao W
CORPORATE SOURCE: Department of Medicine, University of Texas Health Science Center, San Antonio 78284.
CONTRACT NUMBER: AG-10531 (NIA)
RO1 AG-03417 (NIA)
SOURCE: Journal of immunology (Baltimore, Md. : 1950), (1994 Jun 15) 152 (12) 5979-87.
Journal code: 2985117R. ISSN: 0022-1767.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Abridged Index Medicus Journals; Priority Journals
ENTRY MONTH: 199407
ENTRY DATE: Entered STN: 19940721
Last Updated on STN: 19940721
Entered Medline: 19940713

AB This study was designed to investigate the mechanisms by which marine lipids rich in long chain omega-3 fatty acids inhibit **autoimmune** disease and prolong the survival rate in female (NZB/NZW) F1 (B/W) mice, an animal model for human SLE. Nutritionally adequate semipurified diets containing at 10% either corn oil (CO) or fish oil (FO) were fed from 1 mo of age and were monitored for proteinuria and survival. Proteinuria was detected earlier and became progressively severe in CO-fed mice. The average life span was significantly shortened by the CO diet (266.7 days +/- 12.5), whereas FO extended the survival significantly (402.1 days +/-

26.1; p < 0.001). A cross-sectional study at 6.5 mo of age revealed an increased **proliferative** response to T cell mitogens including bacterial superantigens and decreased serum anti-dsDNA Ab titers in the FO group compared with the CO group. Furthermore, splenocytes from the FO group when stimulated with Con A had higher IL-2 and lower IL-4 production similar to that of young (3.5 mo) mice. Flow cytometric analyses of splenocytes revealed lower Ig+, higher lymphocyte **endothelial** cell adhesion molecule-1, and lower Pgp-1+ cells within CD4+ and CD8+ subsets in FO-fed mice. Also, elevated IL-2 and IL-4 and significantly higher **TGF-beta** 1 and lower c-myc and c-ras mRNA expression and higher **TGF-beta** 1 and significantly lower c-Myc and c-Ha-Ras proteins were detected in spleens of FO-fed mice. Fatty acid analysis revealed significantly higher linoleic (18:2 omega-6) and arachidonic (20:4 omega-6) acid levels in splenocytes of the CO-fed group and higher eicosapentaenoic (20:5 omega-3) and docosahexanoic (22:6 omega-3) acid levels in the FO-fed group, indicating that changes in membrane fatty acid composition may contribute to the altered immune function and gene expression during the development of murine SLE.

L21 ANSWER 37 OF 134 MEDLINE on STN
ACCESSION NUMBER: 94044444 MEDLINE
DOCUMENT NUMBER: PubMed ID: 8227972
TITLE: Antagonistic effects of endogenous and exogenous **TGF-beta** and TNF on auto-immune diseases in mice.
AUTHOR: Santambrogio L; Hochwald G M; Leu C H; Thorbecke G J
CORPORATE SOURCE: Department of Pathology, NYU School of Medicine, NY 10016.
SOURCE: Immunopharmacology and immunotoxicology, (1993 Aug) 15 (4) 461-78.
Journal code: 8800150. ISSN: 0892-3973.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199312
ENTRY DATE: Entered STN: 19940117
Last Updated on STN: 20000303
Entered Medline: 19931203

AB Injection of **transforming growth factor beta** 1 (**TGF-beta** 1) for five days during the late phase of the immunization process leading either to collagen type II induced arthritis (CIA) or to experimental allergic encephalomyelitis (EAE) protects against the development of these auto-immune diseases. Tumor necrosis factor alpha (TNF-alpha) injected during this same interval aggrevates CIA. In addition, anti-**TGF-beta** exacerbates and anti-TNF protects against CIA, acute and relapsing EAE, suggesting an important regulatory role for the endogenous production of the two cytokines on the severity of these diseases. More detailed studies about the mechanism of action of **TGF-beta** in acute EAE show that there is no detectable effect of **TGF-beta** on the development of sensitized T cells in vivo, as assayed by the **proliferative** responses of T cells from lymph nodes and peripheral blood to myelin antigens. Nevertheless, the number of lymphoid cells infiltrating the central nervous tissue is much greater in untreated than in **TGF-beta**-treated, protected mice. We conclude that it is likely that **TGF-beta** protects against experimental auto-immune diseases by interfering with the entry of lymphoid cells into the target organs through inhibition of the upregulation of adhesion molecule expression on **endothelial** cells, and with subsequent inflammatory processes inside the target organs by antagonizing both the production and the effects of TNF.

L21 ANSWER 56 OF 134 EMBASE COPYRIGHT 2005 ELSEVIER INC. ALL RIGHTS RESERVED. on STN
ACCESSION NUMBER: 1999300046 EMBASE
TITLE: High glucose stimulates **proliferation** and collagen type I synthesis in renal cortical **fibroblasts**: Mediation by autocrine activation of **TGF-β** .
AUTHOR: Han D.C.; Isono M.; Hoffman B.B.; Ziyadeh F.N.
CORPORATE SOURCE: Dr. F.N. Ziyadeh, Renal-Electrolyte Division, University of Pennsylvania, 700 Clinical Research Building, 415 Curie Boulevard, Philadelphia, PA 19104-6144, United States. ziyadeh@mail.med.upenn.edu
SOURCE: Journal of the American Society of Nephrology, (1999) 10/9 (1891-1899).
Refs: 45
ISSN: 1046-6673 CODEN: JASNEU
COUNTRY: United States
DOCUMENT TYPE: Journal; Article
FILE SEGMENT: 005 General Pathology and Pathological Anatomy
028 Urology and Nephrology
029 Clinical Biochemistry
LANGUAGE: English
SUMMARY LANGUAGE: English
AB Renal tubular epithelial cells and interstitial **fibroblasts** are active participants in tubulointerstitial fibrosis, the best correlate of decreased glomerular filtration in diabetic nephropathy. It was reported previously that high ambient glucose stimulates **transforming growth factor-β (TGF-. beta.)** mRNA and bioactivity, promotes cellular hypertrophy, and increases collagen synthesis in proximal tubular cells. This study evaluates the effects of high glucose and **TGF-β** on the behavior of murine renal cortical **fibroblasts** (TFB) in culture. High glucose (450 mg/dl) significantly increased [3H]-thymidine incorporation (by 60 to 80% after 24 to 72 h) and cell number, without significantly increasing cell death when compared with normal glucose (100 mg/dl). There also was a transient increase in the mRNA of the c-myc and egr- 1 early-response genes. Exogenous **TGF-β** 1 was promitogenic rather than **antiproliferative** in contrast to other renal cell types. Northern blot analysis demonstrated constitutive expression of **TGF-β** 1, **-β** 2, and **-. beta.**3 transcripts. Exposure to high glucose increased all three **TGF-β** isoforms in a time-dependent manner. High glucose as well as exogenous **TGF-β** 1 also increased [3H]-proline incorporation, α(I) collagen mRNA, and type I collagen protein (measured by immunoassay). Treatment with a neutralizing pan-selective monoclonal anti-**TGF-β** antibody markedly attenuated the stimulation by high ambient glucose of thymidine incorporation, **TGF-β** 1 mRNA, and type I collagen mRNA and protein levels. It is concluded that high ambient glucose and exogenous **TGF-β** 1 share similar actions on renal **fibroblasts.** Moreover, the stimulation of cell **proliferation** and collagen type I synthesis in these cells by high ambient glucose are mediated by activation of an autocrine **TGF-. beta.** system.

L21 ANSWER 57 OF 134 EMBASE COPYRIGHT 2005 ELSEVIER INC. ALL RIGHTS RESERVED. on STN
ACCESSION NUMBER: 97333007 EMBASE
DOCUMENT NUMBER: 1997333007
TITLE: Mast cell interactions with the nervous system: Relationship to mechanisms of disease.
AUTHOR: Dines K.C.; Powell H.C.
CORPORATE SOURCE: Dr. K.C. Dines, Univ. of California at San Diego, Department of Pathology, 9500 Gilman Drive, San Diego, CA 92093-0612, United States
SOURCE: Journal of Neuropathology and Experimental Neurology, (1997) 56/6 (627-640).
Refs: 95
ISSN: 0022-3069 CODEN: JNENAD
COUNTRY: United States
DOCUMENT TYPE: Journal; General Review
FILE SEGMENT: 005 General Pathology and Pathological Anatomy
008 Neurology and Neurosurgery
026 Immunology, Serology and Transplantation
LANGUAGE: English
SUMMARY LANGUAGE: English
AB In summary, mast cell interactions in the nervous system are relevant to

both physiological processes (i.e. reproduction) and pathologic states (i.e. inflammatory demyelination, painful disorders, toxic and metabolic disease, and tumor angiogenesis). Their physiologic roles may contribute to gender- related vulnerability to inflammatory disease and may modulate sensitivity to pain. Mast cells are universally involved in tissue repair and they release and respond to trophic factors such as NGF. These cells also produce and react to cytokines, and thus appear to play a role in tissue degeneration as well as repair. In certain neurological diseases, i.e. **multiple sclerosis** and Guillain-Barre syndrome, the ability of mast cell proteases to degrade specific myelin proteins suggests that these cells are agents, rather than bystanders, in the demyelinative process. Even more intriguing is their recently identified capacity to process bacterial antigen as efficiently as activated macrophages, suggesting that a more critical role than previously suspected might be considered for mast cells in CNS and PNS demyelination. In experimental metabolic disorders such as galactose intoxication and thiamine deficiency, mast cells appear to play a pathogenic role. Thus, in galactose intoxication, altered BNB vascular permeability occurs in conjunction with mast cell **proliferation** and degranulation, while in thiamine deficiency, increased histamine levels have been reported in the rat thalamus (79) and are associated with cell death and **proliferation** as well as mast cell degranulation (Powell and Langlais, unpublished observations). Structural interactions between mast cells and a variety of other cells have been observed, as well as close approximation of mast cells to nerve endings in tissues in which mast cells are especially active. Due to their paracrine nature, mast cells can modulate events in their microenvironment through explosive degranulation, piecemeal degranulation, or 'transgranulation' as they insert granules into neighboring cells. Lastly, these cells play specific roles in reparative processes, e.g. angiogenesis, and are active in neoplastic states, including von Recklinghausen's disease (neurofibromatosis). Their involvement may have been underestimated in neuropathological studies, to date, by a reliance on staining techniques that are inadequate for identifying degranulated and therefore activated mast cells (4). More exacting histochemical and immunostaining procedures will help to fully realize the extent of their participation in physiological and pathological processes.

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ACCESSION NUMBER: 97101258 EMBASE
DOCUMENT NUMBER: 1997101258
TITLE: Graft coronary disease: Old and new dimensions.
AUTHOR: Billingham M.E.
CORPORATE SOURCE: Dr. M.E. Billingham, Stanford Univ. School of Medicine, Stanford, CA 94305-5247, United States
SOURCE: Cardiovascular Pathology, (1997) 6/2 (95-101). Refs: 47
ISSN: 1054-8807 CODEN: CATHE8
PUBLISHER IDENT.: S 1054-8807(96)00089-0
COUNTRY: United States
DOCUMENT TYPE: Journal; Conference Article
FILE SEGMENT: 005 General Pathology and Pathological Anatomy
009 Surgery
018 Cardiovascular Diseases and Cardiovascular Surgery
037 Drug Literature Index
LANGUAGE: English
SUMMARY LANGUAGE: English

AB This article reviews briefly the histopathologic description of the lesions and the new research thrusts in the etiology of graft coronary disease. There are now over 36,000 cardiac allografts (including those of combined heart-lung) worldwide. Immunosuppressive management has modulated acute rejection. However, graft coronary vascular disease (GCD) is the major cause of death or retransplantation after the first postoperative year. Graft coronary disease is seen as early as 3 months or as late as 21 years posttransplant. Infants, children, and adults are affected. The pathology of GCD can affect all the major coronary vessels along their entire length, including major branches and intramyocardial vessels. The characteristic lesion is that of concentric intimal **proliferation** eventually blocking the entire lumen; smaller diameter vessels may be blocked entirely before the larger epicardial vessels. Angioplasty and coronary artery bypass surgery is therefore not optimal. The intimal **proliferation** is due mainly to transmigration and transformation of smooth muscle cells through small gaps in the internal elastic membrane. Recent studies have outlined vascular **endothelial** cell activation of various kinds (triggered by rejection and other processes), including cytokines, growth factors, extracellular matrix proteins, adhesion molecules, and mediators such as interleukin-1 (IL-1),

interleukin-2 (IL-2), platelet-derived growth factor (PDGF), tumor growth factor-β (TGF-β), and tumor necrosis factor-α (TNF-α). Cellular and humoral rejection mechanisms also are likely involved. Nonimmunologic factors contributing to GCD include hyperlipidemia, **diabetes** mellitus, cytomegaloviral (CMV) infection, as well as prolonged ischemic time when harvesting the heart. So far, many of these etiologic studies have produced variable and sometimes conflicting results, and none are conclusive. Future goals in the study of GCD include improved ischemic protection, more target-selective immunosuppression, blocking of vascular activation pathways, and the development of graft tolerance and even xenografting. More research in this discouraging aspect of cardiac transplantation is required.

L21 ANSWER 59 OF 134 EMBASE COPYRIGHT 2005 ELSEVIER INC. ALL RIGHTS RESERVED. on STN

ACCESSION NUMBER: 97084655 EMBASE
DOCUMENT NUMBER: 1997084655
TITLE: Intravitreal growth factors in **proliferative** diabetic retinopathy: Correlation with neovascular activity and glycaemic management.
AUTHOR: Boulton M.; Gregor Z.; McLeod D.; Charteris D.; Jarvis-Evans J.; Moriarty P.; Khaliq A.; Foreman D.; Allamby D.; Bardsley B.
CORPORATE SOURCE: Dr. M. Boulton, Department of Ophthalmology, Manchester Royal Eye Hospital, Oxford Road, Manchester M13 9WH, United Kingdom
SOURCE: British Journal of Ophthalmology, (1997) 81/3 (228-233). Refs: 34
ISSN: 0007-1161 CODEN: BJOPAL
COUNTRY: United Kingdom
DOCUMENT TYPE: Journal; Article
FILE SEGMENT: 003 Endocrinology
005 General Pathology and Pathological Anatomy
012 Ophthalmology
037 Drug Literature Index
LANGUAGE: English
SUMMARY LANGUAGE: English

AB Aim - Many growth factors are implicated in **proliferative** diabetic retinopathy (PDR). It was decided to test the hypothesis that no one factor is predominant but that a regular profile of levels of different growth factors might be operating, and that the profile might differ according to whether or not insulin therapy was part of the patient's glycaemic management. The levels of several growth factors in vitrectomy samples were therefore determined from diabetic patients with tractional, non-haemorrhagic sequelae of PDR and these levels were correlated with (a) each other (growth factor profile), (b) neovascular activity, and (c) the method of glycaemic management (insulin treated (IT) or non-insulin treated (NIT)). Methods - 72 samples of vitreous were obtained from either diabetic patients with PDR (n = 51) or non-diabetic (control) patients (n = 21). Levels of bFGF, IGF-I, EGF, and insulin were determined by radioimmunoassay; levels of TGF-β 2 by ELISA; and levels of IGF-I binding protein by western ligand blotting. The data were analysed using appropriate statistics. Results - There was no regular growth factor profile, bFGF levels were significantly greater in vitreous from NIT patients compared with IT patients and controls. The highest levels of bFGF were found in NIT patients with actively vascularised membranes. TGF-β 2 levels were significantly greater in vitreous from IT patients compared with NIT patients and controls The highest levels of **TGF-.beta** .2 were found in IT patients with actively vascularised membranes. IGF-I levels were significantly greater in diabetics (irrespective of insulin treatment) than non-diabetics and the highest levels of IGF-I were found in IT patients with actively vascularised membranes. A 34 kDa IGFBP was the predominant IGFBP identified in vitreous and was found to be elevated in diabetics patients. Conclusion - In PDR there is a correlation between intravitreal growth factor levels and both disease state (whether active or fibrotic) and method of glycaemic management.

L21 ANSWER 60 OF 134 EMBASE COPYRIGHT 2005 ELSEVIER INC. ALL RIGHTS RESERVED. on STN

ACCESSION NUMBER: 97041069 EMBASE
DOCUMENT NUMBER: 1997041069
TITLE: Growth factors and their receptors in the retina and pigment epithelium.
AUTHOR: Tanihara H.; Inatani M.; Honda Y.
CORPORATE SOURCE: H. Tanihara, Dept. Ophthalmology Visual Sciences, Kyoto University, Graduate School of Medicine, Kawahara-cho 54,

Shogoin, Sakyo-ku, Kyoto 606-01, Japan
SOURCE: Progress in Retinal and Eye Research, (1997) 16/2 (271-301).
Refs: 185
ISSN: 1350-9462 CODEN: PRTRES
PUBLISHER IDENT.: S 1350-9462(96)00028-6
COUNTRY: United Kingdom
DOCUMENT TYPE: Journal; General Review
FILE SEGMENT: 005 General Pathology and Pathological Anatomy
012 Ophthalmology
029 Clinical Biochemistry
LANGUAGE: English
SUMMARY LANGUAGE: English

AB Growth factors are regarded as factors to induce (or in some cases inhibit) growth of cells/tissues in vitro o and/or in vivo. Molecules regarded as growth factors consist of six groups: the **transforming growth factor-β (TGF-**. **beta.)**, platelet-derived growth factor (PDGF), epidermal growth factor (EGF), **fibroblast** growth factor (FGF) and insulin-like growth factor (IGF). In an attempt to introduce clinical implications of such factors in ocular diseases, in this review article, we describe the expression of growth factors and their receptors in the neural retina and retinal pigment epithelium (RPE). Also, the expression, clinical implications and therapeutic potential influence of such factors in a number of ocular diseases, such as **proliferative** vitreoretinopathy (PVR), epiretinal membranes, macular holes, diabetic retinopathy and retinal degeneration, are discussed. In summary, **TGF-β** is expressed in RPE cells under a variety of conditions, and is thought to enhance various processes in the pathogenesis of PVR in several ways such as stimulating cell-mediated gel contraction, modifying mitogenic effects of other growth factors and enhancing extracellular matrix production and the resultant fibrosis reaction. In part because of these diverse effects. **TGF-**. **beta.** is a good candidate for adjunct use with vitrectomy for the treatment of macular holes. PDGF is another growth factor that is thought to be involved in the onset of **proliferative** intraocular diseases such as epiretinal membranes and PVR. PDGF is a potent mitogenic and chemotactic factor for retina-derived cells. With respect to **proliferative** diabetic retinopathy in particular, recent developments in clinical and basic research on the angiogenic effects of VEGF, which is also a member of PDGF family, have drawn much attention from investigators. So-called eye- and retina-derived growth factors have been shown to be identical to FGF. In both retina and RPE cells, FGF is known to induce a variety of changes in cellular **proliferation**, differentiation and in vivo angiogenesis. In addition to these changes, FGF is a promising neuroprotective drug against some retinal degenerative diseases. There is currently limited information on the relationship of differentiation of retinal precursor cells in the developing retina and EGF/**TGF-α**. Further studies on its physiological and pathological significance in the retina and RPE are required. IGF and insulin also are thought to play important roles in the development of diabetic retinopathy. Recent insight into the effects of VEGF, in addition to those of IGF/insulin, has modified our thinking of contribution of this growth factor to the **proliferative** and angiogenic response of the retina in **diabetes**. Taken together, our knowledge of the effects of growth factors on the eye has advanced dramatically because of the recent advances in molecular biology and cell biology. A number of investigators around the world are currently performing intensive research in an attempt to understand the significance of these various factors in the pathogenesis of ocular diseases. It is reasonable to assume that novel concepts in the treatment of many refractory ocular diseases will result from such studies.

L21 ANSWER 61 OF 134 EMBASE on STN

ACCESSION NUMBER: 96055982 EMBASE
DOCUMENT NUMBER: 1996055982
TITLE: Partial characterization of a putative new growth factor present in pathological human vitreous.
AUTHOR: Pombo C.; Bokser L.; Casabiell X.; Zugaza J.; Capeans M.; Salorio M.; Casanueva F.
CORPORATE SOURCE: Molecular Cellular Endocrinology Lab, Dept Medicine, Faculty of Medicine, University of Santiago de Compostela,Santiago de Compostela, Spain
SOURCE: Graefe's Archive for Clinical and Experimental Ophthalmology, (1996) 234/3 (155-163).
ISSN: 0721-832X CODEN: GACODL
COUNTRY: Germany

DOCUMENT TYPE: Journal; Article
FILE SEGMENT: 012 Ophthalmology
LANGUAGE: English
SUMMARY LANGUAGE: English

AB Background: Several growth factors have been implicated in the development of **proliferative** eye diseases, and some of those are present in human vitreous (HV). The effects of HV on cellular responses which modulate **proliferative** cell processes were studied. This study describes the partial characterization of a vitreous factor activity which does not correspond to any of the previously reported growth factors in pathological HV. Methods: Vitreous humour was obtained from medical vitrectomies, from patients with PDR and PVR. The biological activity of the vitreous factor was determined by its ability to increase cytosolic calcium concentration ([Ca2+](i)), increase production of inositol phosphates, and induce cell **proliferation** in the cell line EGFR T17. In some experiments other cell lines, such as NIH 3T3, 3T3-L1, FRTL5, A431, PC12, Y79, and GH3, were also employed. Measurement of [Ca2+](i) in cell suspensions was performed using the fluorescent Ca2+ indicator fura-2. The activity of the factor present in HV was compared with other growth factors by means of: (a) [Ca2+](i) mobilization pattern, (b) sequential homologous and heterologous desensitization of receptors, (c) effects of phorbol esters on their action, and (d) inactivation after treatment with different proteolytic enzymes. Results: The HV-induced cell **proliferation** and increases in [Ca2+](i) concentration were characterized by a peculiar time pattern. The different approaches used ruled out its identity with PDGF, bFGF, EGF, **TGF-.beta** ., IGFs, TNF-α, NGF, and other compounds such as ATP, angiotensin I, and bradykinin. Vitreous factor actions are mediated by specific receptors apparently regulated by PKC. This factor is able to induce [Ca2+](i) mobilization in most of the cell lines studied, indicating that its effects are not tissue specific. Conclusions: These results suggest the presence of a growth factor activity in pathological HV which may be due to the presence of an undescribed growth factor in the eye.

L21 ANSWER 62 OF 134 EMBASE COPYRIGHT 2005 ELSEVIER INC. ALL RIGHTS RESERVED. on STN
ACCESSION NUMBER: 95234378 EMBASE
DOCUMENT NUMBER: 1995234378
TITLE: Angiogenesis: Mechanistic insights, neovascular diseases, and therapeutic prospects.
AUTHOR: Battegay E.J.
CORPORATE SOURCE: Dept. of Research/Internal Medicine, University Hospitals,CH-4031 Basel, Switzerland
SOURCE: Journal of Molecular Medicine, (1995) 73/7 (333-346). ISSN: 0946-2716 CODEN: JMLME8
COUNTRY: Germany
DOCUMENT TYPE: Journal; General Review
FILE SEGMENT: 003 Endocrinology
016 Cancer
018 Cardiovascular Diseases and Cardiovascular Surgery
LANGUAGE: English
SUMMARY LANGUAGE: English

AB This review of angiogenesis aims to describe (a) stimuli that either elicit or antagonize angiogenesis, (b) the response of the vasculature to angiogenic or antiangiogenic stimuli, i.e., processes required for the formation of new vessels, (c) aspects of angiogenesis relating to tissue remodeling and disease, and (d) the potential of angiogenic or antiangiogenic therapeutic measures. Angiogenesis, the formation of new vessels from existing microvessels, is important in embryogenesis, wound healing, diabetic retinopathy, tumor growth, and other diseases. Hypoxia and other as yet ill-defined stimuli drive tumor, inflammatory, and connective tissue cells to generate angiogenic molecules such as vascular **endothelial** growth factor (VEGF), **fibroblast** growth factor (FGF), **transforming growth factor-.beta.** (**TGF-β**), platelet-derived growth factor (PDGF), and others. Natural and synthetic angiogenesis inhibitors such as angiostatin and thalidomide can repress angiogenesis. Angiogenic and antiangiogenic molecules control the formation of new vessels via different mechanisms. VEGF and FGF elicit their effects mainly via direct action on relevant **endothelial** cells. **TGF-.beta.** and PDGF can attract inflammatory or connective tissue cells which in turn control angiogenesis. Additionally, PDGF may act differently on specific phenotypes of **endothelial** cells that are engaged in angiogenesis or that are of microvascular origin. Thus phenotypic traits of **endothelial** cells committed to angiogenesis may determine their cellular responses to given stimuli. Processes necessary for new vessel formation and regulated by angiogenic/antiangiogenic molecules include the migration and **proliferation** of **endothelial**

cells from the microvasculature, the controlled expression of proteolytic enzymes, the breakdown and reassembly of extracellular matrix, and the morphogenic process of **endothelial** tube formation. In animal models some angiogenesis-dependent diseases can be controlled via induction or inhibition of new vessel formation. Life-threatening infantile hemangiomas are a first established indication for antiangiogenic therapy in humans. Treatment of other diseases by modulation of angiogenesis are currently tested in clinical trials. Thus the manipulation of new vessel formation in angiogenesis-dependent conditions such as wound healing, inflammatory diseases, ischemic heart and peripheral vascular disease, myocardial infarction, diabetic retinopathy, and cancer is likely to create new therapeutic options.

L21 ANSWER 63 OF 134 EMBASE COPYRIGHT 2005 ELSEVIER INC. ALL RIGHTS RESERVED. on STN
ACCESSION NUMBER: 95078458 EMBASE
DOCUMENT NUMBER: 1995078458
TITLE: Cellular events in the evolution of experimental diabetic nephropathy.
AUTHOR: Young B.A.; Johnson R.J.; Alpers C.E.; Eng E.; Gordon K.; Floege J.; Couser W.G.
CORPORATE SOURCE: Division of Nephrology, University of Washington,Seattle, WA 98195, United States
SOURCE: Kidney International, (1995) 47/3 (935-944).
ISSN: 0085-2538 CODEN: KDYIA5
COUNTRY: United States
DOCUMENT TYPE: Journal; Article
FILE SEGMENT: 002 Physiology
028 Urology and Nephrology
037 Drug Literature Index
LANGUAGE: English
SUMMARY LANGUAGE: English
AB In several models of progressive glomerular disease, mesangial cell **proliferation**, phenotypic change and increased growth factor expression precede up-regulation of genes for extracellular matrix components (ECM) and mesangial expansion. To examine these events in diabetic nephropathy (DN) we conducted sequential studies of glomeruli in rats with streptozotocin induced DN. We found prominent mesangial cell **proliferation** at three days (4.34 ± 2.24 PCNA + cells/glom vs. 1.6 ± 0.74 in controls, $P < 0.001$) associated with increased α-actin expression. PDGF B-chain mRNA was slightly increased at day one, and PDGF B-chain immunostaining was slightly increased at days one and six. Staining for bFGF was significantly increased at three days (2.2 ± 0.6 vs 1.2 ± 0.1 in controls, $P < 0.01$). There was also an early increase in platelets in glomeruli of diabetic animals, and platelet depletion significantly inhibited the early phase of **proliferation**. In addition to mesangial cell **proliferation**, a prominent glomerular macrophage infiltration began at day three and peaked at day 30 (3.94 ± 1.47 vs. 2.08 ± 1.13 in controls, $P < 0.01$). **TGF-beta.** mRNA increased at days 14 and 30. Insulin treatment prevented mesangial cell **proliferation**, actin expression, and macrophage infiltration, and normalized **TGF-β** expression at 14 and 30 days. These multiple cellular events preceded any detectable increases in glomerular gene expression or deposition of collagen I, IV or laminin.

L21 ANSWER 64 OF 134 EMBASE COPYRIGHT 2005 ELSEVIER INC. ALL RIGHTS RESERVED. on STN
ACCESSION NUMBER: 94380218 EMBASE
DOCUMENT NUMBER: 1994380218
TITLE: Regulation of interleukin-11 protein and mRNA expression in neonatal and adult **fibroblasts** and **endothelial** cells.
AUTHOR: Suen Y.; Chang M.; Sun min Lee; Buzby J.S.; Cairo M.S.
CORPORATE SOURCE: Hematology/Oncology Research BMT, Children's Hospital of Orange County, 455 S Main St,Orange, CA 92668, United States
SOURCE: Blood, (1994) 84/12 (4125-4134).
ISSN: 0006-4971 CODEN: BLOOAW
COUNTRY: United States
DOCUMENT TYPE: Journal; Article
FILE SEGMENT: 025 Hematology
029 Clinical Biochemistry
030 Pharmacology
037 Drug Literature Index
LANGUAGE: English
SUMMARY LANGUAGE: English
AB Interleukin-11 (IL-11), a newly-identified cytokine produced by stromal

cells, elevates platelet counts in neonatal rats in vivo and synergizes in vitro with IL-3 in supporting murine megakaryocyte colony formation and stimulating hematopoietic stem cells. Megakaryocytopoiesis is also enhanced by other colony-stimulating factors (CSFs), including IL-3, IL-6, and Steel factor (SLF). Dysregulation of neonatal thrombopoiesis predisposes newborns to develop thrombocytopenia during **sepsis**, despite increased circulating pools of committed thrombopoietic progenitors in newborn cord blood compared with adult. We previously reported reduced expression of granulocyte- macrophage colony-stimulating factor (GM-CSF), granulocyte-colony-stimulating factor (G-CSF), and IL-3 from stimulated cord mononuclear cells, but increased expression of SLF in human umbilical vein **endothelial** cells (HUVEC). Therefore, we hypothesized that IL-3, IL-6, and SLF might modulate megakaryocytopoiesis by inducing IL-11 expression, and newborns might express altered levels of IL-11 mRNA expression during activated conditions, contributing to the difference in circulating colony-forming unit- megakaryocyte (CFU-Meg) cord and adult blood. Phorbol myristate acetate (PMA) induced a twofold greater increase in IL-11 mRNA expression in neonatal **fibroblasts** (NFb) compared with adult **fibroblasts** (AFb), and a 3.6-fold greater increase in HUVEC than human adult aorta **endothelial** cells (HAEC) by Northern blot analysis. PMA also induced a threefold greater increase in IL- 11 protein production in NFb than AFb. Physiologic agonists IL-1α, **transforming growth factor**-β 1 (**TGF**-β 1), and **TGF**-β 2 triggered upregulation of IL-11 mRNA expression in both NFb and AFb. However, IL-3, IL-6, PIXY321 (a GM-CSF-IL-3 fusion protein), and SLF failed to upregulate IL-11 mRNA expression from the basal level, while macrophage-colony stimulating factor (M-CSF) mRNA was significantly induced. These data suggest that the hematopoietic effect of IL-6, SLF, and IL-3 on megakaryocytopoiesis is probably not mediated by secondary IL-11 mRNA expression. Similarly, inflammatory agonists IL-1β , lipopolysaccharide (LPS), and tumor necrosis factor-α (TNF-α) alone did not upregulate IL-11 expression from the basal level in **endothelial** cells, whereas intracellular adhesion molecule-1 (ICAM- 1) and **endothelial** leukocyte adhesion molecule-1 were strongly induced. Minimal basal IL-11 expression was detected by reverse transcriptase- polymerase chain reaction (RT-PCR) in NFb, AFb, HUVEC and HAEC. The quantitative RT-PCR assay also verified that IL-1β - and TNF-α-stimulated HUVEC and HAEC, and IL-3- and IL-6-stimulated NFb and AFb only expressed minimal levels of IL-11 mRNA. Nuclear run-on studies showed no appreciable difference between neonatal and adult IL-11 transcriptional rates from **endothelial** cells following stimulation, suggesting that the difference in IL-11 expression between neonatal and adult **endothelial** cells may be regulated posttranscriptionally. These in vitro studies suggest that increased IL-11 expression and production in neonatal stromal cells may contribute to the increase in circulating thrombopoietic progenitors and increased progenitor **proliferative** rates observed in cord blood.

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ACCESSION NUMBER: 94378854 EMBASE
DOCUMENT NUMBER: 1994378854
TITLE: Atherosclerosis: Biology and pathogenesis.
AUTHOR: Coffman J.D.
CORPORATE SOURCE: University Hospital, 88 E, Newton Street,Boston, MA 02118, United States
SOURCE: Journal of Vascular Technology, (1994) 18/5 (227-230). ISSN: 1044-4122 CODEN: JVTEEJ
COUNTRY: United States
DOCUMENT TYPE: Journal; Article
FILE SEGMENT: 005 General Pathology and Pathological Anatomy
018 Cardiovascular Diseases and Cardiovascular Surgery
026 Immunology, Serology and Transplantation
029 Clinical Biochemistry
LANGUAGE: English
SUMMARY LANGUAGE: English

AB In summary, the atherosclerotic lesion progresses from a simple fibrous plaque to an ulcerated, fissured intimal lesion characterized by a central core of foam cells, smooth muscle cell overgrowth, cellular necrosis, and calcification. The instigating cause is unknown, but **endothelial** cells have been shown to react abnormally in patients with hypercholesterolemia, hypertension, and **diabetes** mellitus, and in tobacco smokers. The **endothelial** abnormality can be demonstrated before any pathological lesions are seen. It is usually shown by a defect in the elaboration of vasoactive factors and has been studied in humans besides animals. This **endothelial** damage may cause the

release of growth, thrombogenic, and vasoactive factors; macrophages and platelets could be attracted and release their own growth, thrombogenic, and vasoactive factors. This process would set up a vicious cycle causing more **endothelial** damage and smooth muscle cell and **fibroblast** migration and **proliferation.** What causes macrophages to become foam cells is unknown, but oxidized LDL is the prime suspect. The **endothelial** cell alterations described with hypercholesterolemia may be more important than only leading to advanced atherosclerotic lesions. In studies designed to induce regression of atherosclerotic lesions in humans with several risk factors, lesions have been shown to stabilize or regress, but surprisingly, cardiac events have markedly decreased in a short time. Whereas lesions regression may take 2 or more years, the cardiac events were decreased within 6 months. This finding may correlate with the reversal of **endothelial** vasoactive secretion dysfunction that has been shown with correction of hypercholesterolemia in humans.

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ACCESSION NUMBER: 94355546 EMBASE
DOCUMENT NUMBER: 1994355546
TITLE: Detection of vascular **endothelial** growth factor messenger RNA and vascular **endothelial** growth factor-like activity in **proliferative** diabetic retinopathy.
AUTHOR: Malecaze F.; Clamens S.; Simorre-Pinatel V.; Mathis A.; Chollet P.; Favard C.; Bayard F.; Plouet J.
CORPORATE SOURCE: Service d'Ophtalmologie, Hopital Purpan, 1 Place du Docteur Baylac,31059 Toulouse, France
SOURCE: Archives of Ophthalmology, (1994) 112/11 (1476-1482). ISSN: 0003-9950 CODEN: AROPAW
COUNTRY: United States
DOCUMENT TYPE: Journal; Article
FILE SEGMENT: 003 Endocrinology
012 Ophthalmology
029 Clinical Biochemistry
LANGUAGE: English
SUMMARY LANGUAGE: English

AB Objective: To study the involvement of eight angiogenic growth factors that have been identified so far in the literature, especially vascular **endothelial** growth factor, in **proliferative** diabetic retinopathy. Methods: Samples of neovascular membranes were obtained from diabetic patients; these samples, excised at vitrectomy, were used to study the expression of messenger RNA of the angiogenic factors by using the method of the reverse transcription-polymerase chain reaction. Vitreous aspirates that were taken from diabetic and control patients were used to quantify vascular **endothelial** growth factor-like activity with a competitive radioreceptor assay. Results: Of the eight angiogenic factors studied, vascular **endothelial** growth factor was the only one that was always expressed in the samples of neovascular membranes. Furthermore, vascular **endothelial** growth factor receptor-binding activity was greater in vitreous aspirates that were obtained from diabetic patients than in samples that were taken from control patients (P<.01). Conclusion: Vascular **endothelial** growth factor seems to be an appropriate candidate for mediating retinal diabetic neovascularization.

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ACCESSION NUMBER: 94300005 EMBASE
DOCUMENT NUMBER: 1994300005
TITLE: Pathogenesis of Graves' ophthalmopathy.
AUTHOR: Gorman C.A.
CORPORATE SOURCE: Division of Endocrinology/Metabolism, Mayo Foundation,Rochester, MN 55905, United States
SOURCE: Thyroid, (1994) 4/3 (379-383). ISSN: 1050-7256 CODEN: THYRER
COUNTRY: United States
DOCUMENT TYPE: Journal; Conference Article
FILE SEGMENT: 003 Endocrinology
005 General Pathology and Pathological Anatomy
012 Ophthalmology
LANGUAGE: English
SUMMARY LANGUAGE: English

AB The clinical expressions of Graves' ophthalmopathy are the consequence of swelling in the retrobulbar space and restricted action of the extraocular muscles, including the lid levators. Retrobulbar tissue swelling is a consequence of lymphocytic infiltration, glycosaminoglycan deposition, and

water binding by the glycosaminoglycans. It is probable that both humoral and cellular immunity are involved and that the **fibroblast** is an important target cell in the orbit. A plausible scenario is that activated T cells that have escaped deletion are perhaps initially directed against an antigen on thyroid follicular cells, infiltrate the orbit, interact with **fibroblasts** exhibiting a shared antigen with follicular cells, and release cytokines into the surrounding tissues. Particularly important may be interferon-γ, **TGF**-β , and IL-1α. In consequence of the action of these cytokines, heat shock protein 72, intercellular adhesion molecules, and HLA-DR are expressed on orbital **fibroblasts**, thereby fomenting the **autoimmune** response in the orbital connective tissue. **Fibroblast** glycosaminoglycan production is stimulated by the cytokines and later **fibroblast proliferation** in response to the same agents results in contraction of the extraocular muscles, the increase in connective tissue volume, and fibrotic restriction of extraocular movement. The sum of these effects results in the clinical expression of ophthalmopathy.

L21 ANSWER 68 OF 134 EMBASE COPYRIGHT 2005 ELSEVIER INC. ALL RIGHTS RESERVED. on STN
ACCESSION NUMBER: 94216903 EMBASE
DOCUMENT NUMBER: 1994216903
TITLE: Clinical potential for **TGF**-β .
AUTHOR: Rowe P.M.
CORPORATE SOURCE: United States
SOURCE: Lancet, (1994) 344/8915 (72-73).
ISSN: 0140-6736 CODEN: LANCAO
COUNTRY: United Kingdom
DOCUMENT TYPE: Journal; (Short Survey)
FILE SEGMENT: 008 Neurology and Neurosurgery
013 Dermatology and Venereology
016 Cancer
029 Clinical Biochemistry
030 Pharmacology
037 Drug Literature Index
LANGUAGE: English

L21 ANSWER 69 OF 134 EMBASE COPYRIGHT 2005 ELSEVIER INC. ALL RIGHTS RESERVED. on STN
ACCESSION NUMBER: 94184788 EMBASE
DOCUMENT NUMBER: 1994184788
TITLE: Mediators of acute and chronic pulmonary hypertension (Part 1).
AUTHOR: Gossage J.R.; Christman B.W.
CORPORATE SOURCE: Vanderbilt University, B1308 MCN, 1161 21st Avenue South,Nashville, TN 37332-2650, United States
SOURCE: Seminars in Respiratory and Critical Care Medicine, (1994) 15/3 (190-198).
ISSN: 1069-3424 CODEN: SRCCEX
COUNTRY: United States
DOCUMENT TYPE: Journal; General Review
FILE SEGMENT: 015 Chest Diseases, Thoracic Surgery and Tuberculosis
018 Cardiovascular Diseases and Cardiovascular Surgery
037 Drug Literature Index
LANGUAGE: English

L21 ANSWER 70 OF 134 EMBASE COPYRIGHT 2005 ELSEVIER INC. ALL RIGHTS RESERVED. on STN
ACCESSION NUMBER: 93241751 EMBASE
DOCUMENT NUMBER: 1993241751
TITLE: Factors controlling pancreatic islet neogenesis.
AUTHOR: Vinik A.; Pittenger G.; Rafaeloff R.; Rosenberg L.
CORPORATE SOURCE: Diabetes Research Institute, Eastern Virginia Medical School, 855 W. Brambleton Avenue,Norfolk, VA 23510, United States
SOURCE: Yale Journal of Biology and Medicine, (1992) 65/5 (471-491).
ISSN: 0044-0086 CODEN: YJBMAU
COUNTRY: United States
DOCUMENT TYPE: Journal; Conference Article
FILE SEGMENT: 003 Endocrinology
021 Developmental Biology and Teratology
029 Clinical Biochemistry
048 Gastroenterology
LANGUAGE: English
SUMMARY LANGUAGE: English
AB We have established a model in which cellophane wrapping induces

reiteration of the normal ontogeny of β -cell differentiation from ductal tissue. The secretion of insulin is physiologic and coordinated to the needs of the animal. Streptozotocin-induced **diabetes** in hamsters can be 'cured' at least half the time. There appears to be activation of growth factor(s) within the pancreas, acting in an autocrine, paracrine, or juxtacrine manner to induce ductal cell **proliferation** and differentiation into functioning β cells. Given the results of our studies to date, it does not seem premature to envisage new approaches to the treatment of **diabetes** mellitus. Identification of the factor(s) regulating islet-cell **proliferation** and differentiation in our model may permit islets to be grown in culture. This concept could be extended to induce endocrine cell differentiation in vitro as well. Furthermore, islet-cell growth factors could be used to provide 'trophic support' to islet transplants as a means of maintaining graft viability. There may also be greater scope for gene therapy when the growth factor(s) have been isolated, purified, sequenced, and cloned.

L21 ANSWER 71 OF 134 EMBASE on STN

ACCESSION NUMBER: 93084285 EMBASE
DOCUMENT NUMBER: 1993084285
TITLE: From serum sickness to cytokines: Advances in understanding the molecular pathogenesis of kidney disease.
AUTHOR: Border W.A.; Noble N.A.
CORPORATE SOURCE: Division of Nephrology, Utah University School of Medicine,Salt Lake City, UT, United States
SOURCE: Laboratory Investigation, (1993) 68/2 (125-128).
ISSN: 0023-6837 CODEN: LAINAW
COUNTRY: United States
DOCUMENT TYPE: Journal; Editorial
FILE SEGMENT: 005 General Pathology and Pathological Anatomy
026 Immunology, Serology and Transplantation
028 Urology and Nephrology
029 Clinical Biochemistry
LANGUAGE: English

L21 ANSWER 72 OF 134 EMBASE on STN

ACCESSION NUMBER: 91194089 EMBASE
DOCUMENT NUMBER: 1991194089
TITLE: On the pathogenesis of diabetic retinopathy: A 1990 update.
AUTHOR: Frank R.N.
CORPORATE SOURCE: Kresge Eye Institute, Wayne State University, School of Medicine, 4717 St Antoine Blvd,Detroit, MI 48201, United States
SOURCE: Ophthalmology, (1991) 98/5 (586-593).
ISSN: 0161-6420 CODEN: OPHTDG
COUNTRY: United States
DOCUMENT TYPE: Journal; Conference Article
FILE SEGMENT: 003 Endocrinology
012 Ophthalmology
LANGUAGE: English
SUMMARY LANGUAGE: English

AB Although most investigators now agree that chronic hyperglycemia is the basis for diabetic retinopathy, this has not been proven definitively. Even if chronic hyperglycemia is the initial common pathway leading to retinopathy and other complications of **diabetes**, it appears to act by different mechanisms in different tissues. The enzyme, aldose reductase, may play a major role in the development of diabetic retinopathy, but contradictory evidence exists. At the present time, results of the only study of aldose reductase inhibition and diabetic retinopathy reported in humans were negative. Another mechanism worthy of consideration is nonenzymatic glycation (glycosylation) of proteins, but there is no direct evidence of a causal role in diabetic retinopathy. Several growth factors have been identified in the retina that may promote neovascularization, and at least two inhibitors may prevent the process. There is evidence to support a role for basic and, perhaps, acidic **fibroblast** growth factors in retinal vasoproliferation. **Transforming growth-factor** β , a peptide produced by capillary pericytes and smooth muscle cells and activated by the interaction of these cells with vascular **endothelial** cells, appears to be an important inhibitor of neovascularization, as is the vascular basement membrane.

L21 ANSWER 73 OF 134 EMBASE on STN

ACCESSION NUMBER: 91147924 EMBASE

DOCUMENT NUMBER: 1991147924
TITLE: Role of peptide growth factors in development of macrovascular complications of **diabetes**.
AUTHOR: Clemmons D.R.
CORPORATE SOURCE: Division of Endocrinology, Department of Medicine, University of North Carolina,Chapel Hill, NC 27599, United States
SOURCE: Diabetes Care, (1991) 14/2 (153-156).
ISSN: 0149-5992 CODEN: DICAD2
COUNTRY: United States
DOCUMENT TYPE: Journal; Article
FILE SEGMENT: 006 Internal Medicine
018 Cardiovascular Diseases and Cardiovascular Surgery
LANGUAGE: English
SUMMARY LANGUAGE: English
AB Peptide growth factors provide an important means of coordinating the growth of cells within tissues and organs. Although their role in controlling cell growth is not well understood, they have been implicated in derangements of cellular **proliferation** that occur in **diabetes**, e.g., mesangial cell hyperplasia and atherosclerosis. Because several growth factors have been structurally characterized and the cell types on which they act identified, research is focusing on developing model systems to determine whether they are involved in the pathogenesis of specific disease states. New techniques, i.e., in situ hybridization, gene transfection, and detailed structural analysis of proteins, have made it possible to define both changes in the relative abundance of specific growth factors and potential changes in their actions in specific disease states. These techniques are being applied in **diabetes** research and will make it possible to determine the alterations that have occurred in growth factor synthesis and growth factor-matrix protein interaction and cell-type-specific alterations in cell growth that occur after loss of normal glucose homeostasis. The findings from these types of analyses should lead to a better understanding of how the complications of **diabetes** develop and rational strategies to control their effects.

L22 ANSWER 1 OF 81 MEDLINE on STN
ACCESSION NUMBER: 2004249714 MEDLINE
DOCUMENT NUMBER: PubMed ID: 15147344
TITLE: **Fucoidan** derived from Cladosiphon okamuranus Tokida ameliorates murine chronic colitis through the down-regulation of interleukin-6 production on colonic epithelial cells.
AUTHOR: Matsumoto S; Nagaoka M; Hara T; Kimura-Takagi I; Mistuyama K; Ueyama S
CORPORATE SOURCE: Yakult Central Institute for Microbiological Research, Tokyo, Japan.. satoshi-matsumoto@yahkult.co.jp
SOURCE: Clinical and experimental immunology, (2004 Jun) 136 (3) 432-9.
Journal code: 0057202. ISSN: 0009-9104.
PUB. COUNTRY: England: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200406
ENTRY DATE: Entered STN: 20040520
Last Updated on STN: 20040626
Entered Medline: 20040625

AB Our previous study indicated that the interleukin (IL)-6/STAT-3 signal was up-regulated in inflammatory bowel disease (IBD) in both humans and animal models. We also discovered phosphorylated STAT-3 in the nucleus of the colonic epithelial cells in IBD mice. Intestinal epithelial cells (IEC) have been shown to secrete IL-6. Therefore, the secretion of IL-6 from IEC may be one of the mechanisms of STAT-3 phosphorylation in IEC during the pathogenesis of IBD, and inhibition of IL-6 production by IEC may be beneficial in preventing IBD. We examined the preventative effect of various types of **fucoidans** on IL-6 production in a lipopolysaccharide (LPS)-stimulated murine colonic epithelial cells line, CMT-93, in vitro. We also determined in vivo the effect of **fucoidans** on murine chronic colitis induced with dextran sodium sulphate. Among **fucoidans**, those from Cladosiphon okamuranus Tokida and Kjellmaniella crassifolia inhibited IL-6 production in CMT-93 cells with the down-regulation of NF-kappaB nuclear translocation. Analysis of the effect of **fucoidan** on murine colitis in vivo showed that the disease activity index and myeloperoxidase activity decreased in mice fed Cladosiphon **fucoidan**, but not Fucus **fucoidan**. Cytokine profiles in colonic lamina propria indicated that the synthesis of interferon (IFN)-gamma and IL-6 decreased and that of IL-**10** and **transforming growth factor** (TGF)-**beta** increased in mice fed Cladosiphon **fucoidan**, compared with mice fed a standard diet or Fucus **fucoidan**. The levels of IL-6 mRNA in colonic epithelial cells was lower in colitis-induced Balb/c mice fed Cladosiphon **fucoidan** than those fed a standard diet. **Fucoidan** improves murine chronic colitis by down-regulating the synthesis of IL-6 in the colonic epithelial cells. **Fucoidan** derived from C. o. Tokida may be useful as a dietary substance for the patients with inflammatory bowel disease.

L22 ANSWER 2 OF 81 MEDLINE on STN
ACCESSION NUMBER: 2004055772 MEDLINE
DOCUMENT NUMBER: PubMed ID: 14758050
TITLE: **Fucoidan** modulates the effect of **transforming growth factor** (TGF)-beta1 on fibroblast proliferation and wound repopulation in in vitro models of dermal wound repair.
AUTHOR: O'Leary Ronan; Rerek Mark; Wood Edward John
CORPORATE SOURCE: School of Medicine, University of Leeds, Leeds LS2 9JT, UK.
SOURCE: Biological & pharmaceutical bulletin, (2004 Feb) 27 (2) 266-70.
Journal code: 9311984. ISSN: 0918-6158.
PUB. COUNTRY: Japan
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200412
ENTRY DATE: Entered STN: 20040204
Last Updated on STN: 20041219
Entered Medline: 20041207

AB Aberrant wound healing, either causing scarring or chronic wounds, is a significant cause of morbidity. There is therefore, considerable interest

in agents which can modulate certain aspects of the wound healing process. **Fucoidans**, sulphated polyfucose polysaccharides which may be extracted from Fucus spp., have been shown to modulate the effects of a variety of growth factors through mechanisms thought to be similar to the action of heparin. We investigated the interaction between two commercial preparations of **fucoidan** and **transforming growth factor** (TGF)-**beta**(1). These preparations of **fucoidan**, as well as heparin, inhibited fibroblast proliferation at concentrations from 0.01 to 100 mg/ml. The anti-proliferative effects of 1 ng/ml TGF-**beta**(1) on dermal fibroblasts were abrogated by **fucoidan** preparation F7 when used at concentrations over 1 mg/ml. In a three dimensional in vitro model of wound repair, the fibroblast populated collagen lattice or "dermal equivalent", TGF-**beta**(1) reduced the rate of fibroblast repopulation of a wound defect created by punch biopsy. Addition of **fucoidan** to the model in the presence of TGF-**beta**(1) increased the rate of fibroblast repopulation of the wound and at **10** mg/ml of **fucoidan** the number of cells which had migrated into the wounded defect was similar to that of control cultures. These data suggest that **fucoidan** has properties which may be beneficial in the treatment of wound healing.

L22 ANSWER 3 OF 81 MEDLINE on STN
ACCESSION NUMBER: 2003246994 MEDLINE
DOCUMENT NUMBER: PubMed ID: 12770932
TITLE: Effect of a kinin B2 receptor antagonist on LPS- and cytokine-induced neutrophil migration in rats.
AUTHOR: Santos Danielle R; Calixto Joao B; Souza Gloria E P
CORPORATE SOURCE: Laboratory of Pharmacology, Faculty of Pharmaceutical Sciences, University of Sao Paulo, Ribeirao Preto, SP, Brazil.
SOURCE: British journal of pharmacology, (2003 May) 139 (2) 271-8. Journal code: 7502536. ISSN: 0007-1188.
PUB. COUNTRY: England: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200402
ENTRY DATE: Entered STN: 20030529
Last Updated on STN: 20040302
Entered Medline: 20040227

AB 1 This study examines the involvement of kinins in neutrophil migration into rat subcutaneous air pouches triggered by lipopolysaccharide (LPS), as well as the putative roles played by kinin B(1) and B(2) receptors, tumour necrosis factor alpha (TNF-alpha), interleukin-1 **beta** (IL-1beta) and selectins in this response. 2 LPS (5 ng to **10** micro g cavity(-1)) injected into the 6-day-old pouch induced a dose- and time-dependent neutrophil migration which peaked between 4 and 6 h, and was maximal following the dose of 100 ng cavity(-1) (saline: 0.46+/-0.1; LPS: 43+/-3.70 x **10**(6) cells cavity(-1) at 6 h). 3 Bradykinin (BK) (600 nmol) injected into the pouch of saline-treated rats induced only modest neutrophil migration (0.73+/-0.16 x **10**(6) cells cavity(-1)). A more robust response to BK (3.2+/-0.25 x **10**(6) cells cavity(-1)) was seen in animals pretreated with captopril, but this was still smaller than the responses to IL-1beta or TNF-alpha (15 pmol: 23+/-2.2 x **10**(6) and 75 pmol: 29.5+/-2 x **10**(6) cells cavity(-1), respectively). Nevertheless, the B(1) agonist des-Arg(9)-BK (600 nmol) failed to induce neutrophil migration. 4 HOE-140 (1 and 2 mg kg(-1)), a B(2) receptor antagonist, reduced LPS-induced neutrophil migration. HOE-140 also reduced the neutrophil migration induced by BK, but had no effect on the migration promoted by IL-1beta or TNF-alpha. des-Arg(9)-[Leu(8)]-BK, B(1) receptor antagonist was ineffective in changing neutrophil migration caused by any of these stimuli. 5 Neutrophil migration induced by LPS or BK was reduced by interleukin-1 receptor antagonist (IL-1ra) (1 mg kg(-1)), sheep anti-rat TNF serum (anti-TNF serum) (0.3 ml cavity(-1)), and the nonspecific selectin inhibitor **fucoidin** (**10** mg kg(-1)). 6 TNF-alpha levels in the pouch fluid were increased by LPS or BK injection, peaking at 0.5-1 h and gradually declining thereafter up to 6 h. IL-1beta levels increased steadily throughout the 6 h period. HOE-140 markedly inhibited the rise in IL-1beta and TNF-alpha levels in pouch fluid triggered by both stimuli. 7 These results indicate that BK participates importantly in selectin-dependent neutrophil migration into the air pouch triggered by LPS in the rat, by stimulating B(2) receptors coupled to synthesis/release of TNF-alpha and IL-1beta.

L22 ANSWER 4 OF 81 MEDLINE on STN
ACCESSION NUMBER: 2003193213 MEDLINE
DOCUMENT NUMBER: PubMed ID: 12473645
TITLE: FEEL-1 and FEEL-2 are endocytic receptors for advanced glycation end products.
AUTHOR: Tamura Yoshiaki; Adachi Hideki; Osuga Jun-ichi; Ohashi Ken; Yahagi Naoya; Sekiya Motohiro; Okazaki Hiroaki; Tomita Sachiko; Iizuka Yoko; Shimano Hitoshi; Nagai Ryozo; Kimura Satoshi; Tsujimoto Masafumi; Ishibashi Shun
CORPORATE SOURCE: Department of Metabolic Diseases, Faculty of Medicine, University of Tokyo, 7-3-1 Hongo, Bunkyo-ku, Tokyo, 113-8655 Japan.
SOURCE: Journal of biological chemistry, (2003 Apr 11) 278 (15) 12613-7.
Journal code: 2985121R. ISSN: 0021-9258.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200307
ENTRY DATE: Entered STN: 20030426
Last Updated on STN: 20030704
Entered Medline: 20030703

AB Advanced glycation end products (AGEs) are nonenzymatically glycosylated proteins, which accumulate in vascular tissues in aging and **diabetes**. Receptors for AGEs include scavenger receptors, which recognize acetylated low density lipoproteins (Ac-LDL) such as scavenger receptor class AI/AII (SR-A), cell surface glycoprotein CD36, scavenger receptor class B type I (SR-BI), and lectin-like oxidized low density lipoprotein receptor-1. The broad ligand repertoire of these receptors as well as the diversity of the receptors for AGEs have prompted us to examine whether AGEs are also recognized by the novel scavenger receptors, which we have recently isolated from a cDNA library prepared from human umbilical vein endothelial cells, such as the scavenger receptor expressed by endothelial cells-I (SREC-I); the fasciclin EGF-like, laminin-type EGF-like, and link domain-containing scavenger receptor-1 (FEEL-1); and its paralogous protein, FEEL-2. At 4 degrees C, (125)I-AGE-bovine serum albumin (BSA) exhibited high affinity specific binding to Chinese hamster ovary (CHO) cells overexpressing FEEL-1 (CHO-FEEL-1) and FEEL-2 (CHO-FEEL-2) with K(d) of 2.55 and 1.68 microg/ml, respectively, but not to CHO cells expressing SREC (CHO-SREC) and parent CHO cells. At 37 degrees C, (125)I-AGE-BSA was taken up and degraded by CHO-FEEL-1 and CHO-FEEL-2 cells but not by CHO-SREC and parent CHO cells. Thus, the ability to bind Ac-LDL is not necessarily a prerequisite to bind AGEs. The (125)I-AGE-BSA binding to CHO-FEEL-1 and CHO-FEEL-2 cells was effectively inhibited by Ac-LDL and polyanionic SR-A inhibitors such as **fucoidan**, polyinosinic acids, and dextran sulfate but not by native LDL, oxidized LDL, or HDL. FEEL-1, which is expressed by the liver and vascular tissues, may recognize AGEs, thereby contributing to the development of diabetic vascular complications and atherosclerosis.

L22 ANSWER 5 OF 81 MEDLINE on STN
ACCESSION NUMBER: 2002632747 MEDLINE
DOCUMENT NUMBER: PubMed ID: 12391246
TITLE: CD11b/CD18-dependent interactions of neutrophils with intestinal epithelium are mediated by fucosylated proteoglycans.
AUTHOR: Zen Ke; Liu Yuan; Cairo Dana; Parkos Charles A
CORPORATE SOURCE: Division of Gastrointestinal Pathology, Department of Pathology and Laboratory Medicine, Emory University, Atlanta, GA 30322, USA.. kzen@emory.edu
CONTRACT NUMBER: HL54229 (NHLBI)
SOURCE: Journal of immunology (Baltimore, Md. : 1950), (2002 Nov 1) 169 (9) 5270-8.
Journal code: 2985117R. ISSN: 0022-1767.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Abridged Index Medicus Journals; Priority Journals
ENTRY MONTH: 200212
ENTRY DATE: Entered STN: 20021023
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Entered Medline: 20021210

AB CD11b/CD18-mediated adhesive interactions play a key role in regulating polymorphonuclear leukocytes (PMN)) migration across intestinal epithelium. However, the identity of epithelial ligands for migrating PMN

remains obscure. In this study we investigated the role of carbohydrates in mediating adhesive interactions between T84 intestinal epithelial cells and CD11b/CD18 purified from PMN. **Fucoidin**, heparin/heparin sulfate, N-acetyl-D-glucosamine, mannose-6-phosphate, and laminarin were found to inhibit adhesion of T84 cells to CD11b/CD18. The most potent inhibitory effects were observed with **fucoidin** (50% inhibition at 1-5 x **10**(-8) M). Binding assays demonstrated that **fucoidin** directly bound to CD11b/CD18 in a divalent cation- and sulfation-dependent fashion that was blocked by anti-CD11b mAbs. Experiments employing CD11b/CD18 as a probe to blot T84 cell fucosylated proteins purified via fucose-specific lectin column revealed several candidate CD11b/CD18 binding proteins with molecular masses of 95, 50, 30, 25, and 20 kDa. Fucosidase treatment of T84 cells resulted in significantly reduced cell adhesion to CD11b/CD18, while no inhibition was observed after neuraminidase treatment. Finally, significant inhibition of T84 cell adhesion to CD11b/CD18 was observed after blocking cell proteoglycan synthesis with p-nitrophenyl-**beta**-D-xylopyranoside. These findings implicate epithelial cell surface proteoglycans decorated with sulfated fucose moieties as ligands for CD11b/CD18 during PMN migration across mucosal surfaces.

L22 ANSWER 6 OF 81 MEDLINE on STN
ACCESSION NUMBER: 2002616598 MEDLINE
DOCUMENT NUMBER: PubMed ID: 12358700
TITLE: Optimization of glycosidases production by Pseudoalteromonas issachenkonii KMM 3549(T).
AUTHOR: Alexeeva Y V; Ivanova E P; Bakunina I Y; Zvaygintseva T N; Mikhailov V V
CORPORATE SOURCE: Far-Eastern State University, Vladivostok, Russia.
SOURCE: Letters in applied microbiology, (2002) 35 (4) 343-6. Journal code: 8510094. ISSN: 0266-8254.
PUB. COUNTRY: England: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200212
ENTRY DATE: Entered STN: 20021011
Last Updated on STN: 20021217
Entered Medline: 20021204

AB AIMS: The present work aimed to design an optimized medium to yield a higher production of glycosides by Pseudoalteromonas issachenkonii KMM 3549(T). METHODS AND RESULTS: Higher levels of **fucoidan** hydrolase, alginase, laminaranase and b-N-acetylglucosaminidase production were obtained with peptone concentrations ranging from 2.5 g l(-1) to **10** g l(-1), while the presence of both yeast extract and glucose did not affect enzyme production. The activity of **fucoidan** hydrolase and laminaranase increased up to 4.83 microM h(-1) mg(-1) and 19.23 microM h(-1) mg(-1) protein, respectively, in growth media containing xylose (1.0 g l(-1)), laminarin (0.5 g l(-1)) or alginate (0.5 g l(-1)), and production of b-N-acetylglucosaminidase substantially increased in the presence of **fucoidan** (0.5 g l(-1)) or galactose (1 g l(-1)). All polysaccharides tested in concentrations of 0.5 g l(-1) **fucoidan** and 0.2 g l(-1) fucose induced production of alginase (up to 5.06 microM h(-1) mg-1 protein). CONCLUSIONS: The production of glycosidases is not only stimulated by the presence of algal polysaccharides, but may also be stimulated by monosaccharides (e.g. xylose). SIGNIFICANCE AND IMPACT OF THE STUDY: The production of glycosidases by Pseudoalteromonas issachenkonii KMM 3549(T) was significantly improved by using a simple nutrient medium containing peptone (2.5 g l(-1)) and xylose (5.0 g l(-1)) in 100% natural seawater.

L22 ANSWER 7 OF 81 MEDLINE on STN
ACCESSION NUMBER: 2002221326 MEDLINE
DOCUMENT NUMBER: PubMed ID: 11877316
TITLE: The role of migrating leukocytes in IL-1 **beta** -induced up-regulation of kinin B(1) receptors in rats.
AUTHOR: Campos Maria M; de Souza Gloria E P; Ricci Natasha D; Pesquero Jorge L; Teixeira Mauro M; Calixto Joao B
CORPORATE SOURCE: Department of Pharmacology, Center of Biological Sciences, Universidade Federal de Santa Catarina, 88015-420 - Florianopolis, SC, Brazil.
SOURCE: British journal of pharmacology, (2002 Mar) 135 (5) 1107-14. Journal code: 7502536. ISSN: 0007-1188.
PUB. COUNTRY: England: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)

LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200208
ENTRY DATE: Entered STN: 20020418
Last Updated on STN: 20020817
Entered Medline: 20020816

AB 1. The present study examines the role of migrating leukocytes in the ability of IL-1 **beta** to induce the functional up-regulation of B(1) receptors, as assessed by kinin B(1) agonist-induced oedema in the rat paw. 2. Pre-treatment with the PAF receptor antagonist WEB 2086 inhibited des-Arg(9)-BK-induced oedema in IL-1 **beta**-treated paws, while the LTB(4) receptor antagonist CP105696 had no effect. Des-Arg(9)-BK-induced paw oedema was also inhibited by pre-treatment with the selectin blocker **fucoidin** or by an anti-CD-18 monoclonal antibody. 3. I.d. injection of IL-1 **beta** produced a 5 - **10**-fold increase of myeloperoxidase (MPO) activity in the rat paw. The increase in MPO activity was significantly inhibited by WEB 2086 (46 +/- 9%), **fucoidin** (68 +/- 5%) or the CD-18 antibody (84 +/- 3%). In contrast, i.d. injection of TNF alpha a dose known to upregulate the B(1) receptor functionally did not induce any significant increase in MPO activity. 4. Des-Arg(9)-BK alone had no effect in MPO activity but enhanced (by about 40%) the response induced by IL-1 **beta**, an effect prevented by the B(1) receptor antagonist des-Arg(9)-[Leu(8)]-BK. 5. The concentration of TNF-alpha was increased in the paws after i.d. injection of IL-1 **beta**. Pre-treatment with **fucoidin**, WEB 2086, anti-CD-18 or CP 105695, significantly reversed the local increases in TNF-alpha concentrations (80 +/- 2; 75 +/- 4, 73 +/- 3 and 40 +/- 2%), respectively. 6. Finally, IL-1 **beta** induced an increase of B(1) receptor mRNA levels in the rat paw, an effect which was prevented by **fucoidin** treatment. 7. Taken together, these results indicate that up-regulation of B(1) receptors in the rat paw following IL-1 **beta** seems to involve the local recruitment of neutrophils and subsequent local TNF-alpha production. The cross-talk between kinins, cytokines and leukocytes implicate B(1) receptors in chronic inflammatory diseases.

L22 ANSWER 8 OF 81 MEDLINE on STN
ACCESSION NUMBER: 2002078806 MEDLINE
DOCUMENT NUMBER: PubMed ID: 11804664
TITLE: Leukocyte recruitment in hepatic injury: selectin-mediated leukocyte rolling is a prerequisite for CD18-dependent firm adhesion.
AUTHOR: Klintman Daniel; Schramm Rene; Menger Michael D; Thorlacius Henrik
CORPORATE SOURCE: Department of Surgery, Malmo University Hospital, Lund University, S-205 02 Malmo, Sweden.
SOURCE: Journal of hepatology, (2002 Jan) 36 (1) 53-9.
Journal code: 8503886. ISSN: 0168-8278.
PUB. COUNTRY: Denmark
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200205
ENTRY DATE: Entered STN: 20020128
Last Updated on STN: 20020502
Entered Medline: 20020501

AB BACKGROUND/AIMS: This study was designed to examine the role of selectins and CD18 in leukocyte recruitment in hepatic injury induced by tumor necrosis factor-alpha (TNF-alpha) and galactosamine (Gal) in vivo. METHODS: Intravital fluorescence microscopy of the hepatic microcirculation was used to quantify leukocyte-endothelium interactions provoked by 24 h of systemic TNF-alpha/Gal challenge in rats. Hepatic injury was evaluated with liver enzymes. RESULTS: When administered after 24 h of TNF-alpha/Gal challenge, **fucoidan**, a selectin-function inhibitor, reduced leukocyte rolling by 69%, whereas firm adhesion was unaltered. In contrast, passive immunization against CD18 decreased leukocyte adhesion by 60%, whereas rolling remained unchanged. Notably, when administered prior to TNF-alpha/Gal, **fucoidan** attenuated both leukocyte rolling and adhesion, by 57 and 69%, respectively. Pretreatment with an anti-CD18 antibody decreased TNF-alpha/Gal-induced rolling and firm adhesion by 25 and 90%, respectively. Moreover, pretreatment with **fucoidan** and the anti-CD18 antibody both protected against TNF-alpha/Gal-induced increases in liver enzymes. For example, the pretreatments reduced alanine aminotransferase by 59 and 87%, respectively. CONCLUSIONS: Our data suggest that TNF-alpha/Gal-induced leukocyte rolling is selectin-mediated and a precondition for

CD18-dependent firm adhesion in hepatic venules. Thus, reducing leukocyte recruitment by inhibition of selectins or CD18 may be useful to control TNF-alpha-induced liver injury.

L22 ANSWER 9 OF 81 MEDLINE on STN
ACCESSION NUMBER: 2002069615 MEDLINE
DOCUMENT NUMBER: PubMed ID: 11795666
TITLE: Staphylococcus aureus alpha toxin mediates polymorphonuclear leukocyte-induced vasocontraction and endothelial dysfunction.
AUTHOR: Buerke Michael; Sibelius Ulf; Grandel Ulrich; Buerke Ute; Grimminger Friedrich; Seeger Werner; Meyer Jurgen; Darius Harald
CORPORATE SOURCE: Department of Medicine, Johannes Gutenberg-University, Mainz, Germany.
SOURCE: Shock (Augusta, Ga.), (2002 Jan) 17 (1) 30-5.
Journal code: 9421564. ISSN: 1073-2322.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200208
ENTRY DATE: Entered STN: 20020125
Last Updated on STN: 20020803
Entered Medline: 20020802

AB The effect of Staphylococcus aureus alpha toxin (alpha-toxin) on selectin-mediated neutrophil adhesion was investigated in polymorphonuclear leukocyte- (PMN) induced vasocontraction and endothelial dysfunction. Adherence of human PMNs to rat aortic endothelium increased significantly following stimulation of the endothelium with alpha-toxin (0.1, 0.5, and 1 microg/mL). This effect could be significantly attenuated by monoclonal antibodies directed against P-selectin or **fucoidin**, a carbohydrate known to block selectins. Unstimulated human PMNs (10(6)cells/mL) were added to organ chambers containing rat aortic rings stimulated with alpha-toxin (0.5 microg/mL). PMNs elicited a significant vasocontraction in alpha-toxin-stimulated, but not in control aortic, rings (142+/-12 mg versus 12+/-4 mg, $P < 0.05$). This PMN-induced vasocontraction was virtually blunted by pretreatment with MAb directed against P-selectin or **fucoidin** ($P < 0.05$). Endothelial function as assessed by endothelium-dependent vasorelaxation to acetylcholine was substantially inhibited after induction of PMN-induced vasocontraction in alpha-toxin-stimulated aortic rings. This endothelial dysfunction was reduced by P-selectin MAb or **fucoidin**. In contrast, endothelium-independent relaxation to sodium nitrite was not altered by PMN incubation, indicating that vascular smooth muscle function was unaffected. Thus, PMN-endothelial interaction following S. aureus a-toxin activation of the vascular endothelium is at least, in part, mediated by selectins. As a consequence, PMN-induced vasocontraction and endothelial dysfunction occur. Such mechanisms may be involved in microcirculation abnormalities encountered in **sepsis** or **septic** shock due to S. aureus infection.

L22 ANSWER 10 OF 81 MEDLINE on STN
ACCESSION NUMBER: 2001429639 MEDLINE
DOCUMENT NUMBER: PubMed ID: 11390374
TITLE: Ligands of macrophage scavenger receptor induce cytokine expression via differential modulation of protein kinase signaling pathways.
AUTHOR: Hsu H Y; Chiu S L; Wen M H; Chen K Y; Hua K F
CORPORATE SOURCE: Faculty of Medical Technology, Institute of Biotechnology in Medicine, National Yang-Ming University, Taipei 112, Taiwan.. hyhsu@ym.edu.tw
SOURCE: Journal of biological chemistry, (2001 Aug 3) 276 (31) 28719-30.
Journal code: 2985121R. ISSN: 0021-9258.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200109
ENTRY DATE: Entered STN: 20010917
Last Updated on STN: 20030105
Entered Medline: 20010913

AB Our previous works demonstrated that ligands of macrophage scavenger receptor (MSR) induce protein kinases (PKs) including protein-tyrosine kinase (PTK) and up-regulate urokinase-type plasminogen activator

expression (Hsu, H. Y., Hajjar, D. P., Khan, K. M., and Falcone, D. J. (1998) J. Biol. Chemical 273, 1240--1246). To continue to investigate MSR ligand-mediated signal transductions, we focus on ligands, oxidized low density lipoprotein (OxLDL), and **fucoidan** induction of the cytokines tumor necrosis factor-alpha (TNF) and interleukin 1 **beta** (IL-1). In brief, in murine macrophages J774A.1, OxLDL and **fucoidan** up-regulate TNF production; additionally, **fucoidan** but not OxLDL induces IL-1 secretion, prointerleukin 1 (proIL-1, precursor of IL-1) protein, and proIL-1 message. Simultaneously, **fucoidan** stimulates activity of interleukin 1-converting enzyme. We further investigate the molecular mechanism by which ligand binding-induced PK-mediated mitogen-activated protein kinase (MAPK) in regulation of expression of proIL-1 and IL-1. Specifically, **fucoidan** stimulates activity of p21-activated kinase (PAK) and of the MAPKs extracellular signal-regulated kinase (ERK), c-Jun NH(2)-terminal kinase (JNK), and p38. Combined with PK inhibitors and genetic mutants of Rac1 and JNK in PK activity assays, Western blotting analyses, and IL-1 enzyme-linked immunosorbent assay, the role of individual PKs in the regulation of proIL-1/IL-1 was extensively dissected. Moreover, tyrosine phosphorylation of pp60Src as well as association between pp60Src and Hsp90 play important roles in **fucoidan**-induced proIL-1 expression. We are the first to establish two **fucoidan**-mediated signaling pathways: PTK(Src)/Rac1/PAK/JNK and PTK(Src)/Rac1/PAK/p38, but not PTK/phospholipase C-gamma 1/PKC/MEK1/ERK, playing critical roles in proIL-1/IL-1 regulation. Our current results indicate and suggest a model for MSR ligands differentially modulating specific PK signal transduction pathways, which regulate atherogenesis-related inflammatory cytokines TNF and IL-1.

L22 ANSWER 11 OF 81 MEDLINE on STN
ACCESSION NUMBER: 2001113336 MEDLINE
DOCUMENT NUMBER: PubMed ID: 11126269
TITLE: The effects of inhibiting leukocyte migration with **fucoidin** in a rat peritonitis model.
AUTHOR: Linnemann G; Reinhart K; Parade U; Philipp A; Pfister W; Straube E; Karzai W
CORPORATE SOURCE: Department of Anesthesiology and Intensive Care Therapy, University Hospital Jena, Germany.
SOURCE: Intensive care medicine, (2000 Oct) 26 (10) 1540-6. Journal code: 7704851. ISSN: 0342-4642.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200102
ENTRY DATE: Entered STN: 20010322
Last Updated on STN: 20010322
Entered Medline: 20010215

AB OBJECTIVES: To study the effects of **fucoidin** on leukocyte rolling and emigration and bacterial colonization in a peritonitis **sepsis** model in rats. DESIGN AND INTERVENTIONS: A controlled study in 64 male Wistar rats, anesthetized and rendered **septic** by cecal ligation and puncture (CLP). Immediately after CLP 32 animals received a continuous infusion of **fucoidin** and 32 a continuous infusion of Ringer's lactate. MEASUREMENTS AND MAIN RESULTS: Systemic leukocyte counts were determined every 2 h after CLP. Surviving animals were anesthetized 24 h after CLP, and intravital measurements of leukocyte rolling in venules in the cremaster muscle were performed. The animals were then killed and their organs harvested for histological and microbiological examinations. The 24-h survival was comparable in the two groups. **Fucoidin**-treated animals had higher leukocyte counts in the systemic circulation and lower counts in the lungs, liver, abdominal cavity, and brain than control animals. The number of bacterial colony forming units in the abdominal cavity, lungs, liver, brain and blood did not differ in the two groups. **Fucoidin** treatment changed the type of bacteria predominantly found in the examined organs from Escherichia coli to Pseudomonas aeruginosa. CONCLUSIONS: In an intra-abdominal model of **sepsis** we found that treatment with **fucoidin** induces leukocytosis inhibits leukocyte rolling and reduces leukocyte emigration in the abdominal cavity, lungs, and liver. Reduction in the number of emigrating leukocytes was not associated with an increase in bacterial counts found in the examined organs.

L22 ANSWER 12 OF 81 MEDLINE on STN
ACCESSION NUMBER: 2001103388 MEDLINE
DOCUMENT NUMBER: PubMed ID: 11058456

TITLE: Identification of perivitelline N-linked glycans as mediators of sperm-egg interaction in chickens.
AUTHOR: Robertson L; Wishart G J; Horrocks A J
CORPORATE SOURCE: Avian Reproduction Group, School of Science and Engineering, University of Abertay Dundee, Bell Street, Dundee DD1 1HG, UK.
SOURCE: Journal of reproduction and fertility, (2000 Nov) 120 (2) 397-403.
Journal code: 0376367. ISSN: 0022-4251.
PUB. COUNTRY: ENGLAND: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200101
ENTRY DATE: Entered STN: 20010322
Last Updated on STN: 20010322
Entered Medline: 20010126

AB This study demonstrates that carbohydrates play an essential role in sperm-egg interactions in birds. Sperm-egg interaction was measured in vitro as the ability of spermatozoa to hydrolyse a small hole in the inner perivitelline layer, the equivalent of the mammalian zona pellucida. Preincubation with Triticum vulgaris lectin (WGA) and succinyl-WGA (S-WGA) at **10** microgram ml(-1) resulted in complete inhibition of sperm-egg interaction, whereas at the same concentration a range of other lectins (Canavalia ensiformis (Con A), Arachis hypogea (PNA), Ulex europaeus II (UEA II), Solanum tuberosum (STA), Tetragonolobus purpureas (LTA) and Pisum sativum (PSA)) were unable to inhibit sperm egg interaction significantly, although fluorescein-labelled derivatives of these lectins were found to stain the inner perivitelline layer. Significant inhibition of sperm-egg interaction was achieved by the addition of N-acetyl-D-glucosamine and **fucoidin** to the assay mixture; however, D-glucose, D-galactose, D-fucose and L-fucose had no significant effect on sperm-egg interaction. Pretreatment of the inner perivitelline layer with N-glycanase significantly reduced sperm-egg interaction, whereas treatment with O-glycanase had no effect. These results demonstrate that N-linked glycans play an essential role in sperm-egg interaction in chickens.

L22 ANSWER 13 OF 81 MEDLINE on STN
ACCESSION NUMBER: 2000501238 MEDLINE
DOCUMENT NUMBER: PubMed ID: 11048670
TITLE: Inhibition of complement activation by water-soluble polysaccharides of some far-eastern brown seaweeds.
AUTHOR: Zvyagintseva T N; Shevchenko N M; Nazarova I V; Scobun A S; Luk'yanov P A; Elyakova L A
CORPORATE SOURCE: Laboratory of Enzymatic Chemistry, Pacific Institute of Bioorganic Chemistry, Far-Eastern Branch of the Russian Academy of Sciences, Vladivostok.. piboc@stl.ru
SOURCE: Comparative biochemistry and physiology. Toxicology & pharmacology : CBP, (2000 Jul) 126 (3) 209-15.
Journal code: 100959500. ISSN: 1532-0456.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200102
ENTRY DATE: Entered STN: 20010322
Last Updated on STN: 20010322
Entered Medline: 20010201

AB **Fucoidans** and laminarans from Laminaria cichorioides, Laminaria japonica, Fucus evanescens, laminaran from Laminaria gurjanovae, other **beta**-D-glucans (translam, pustulan and zymosan) and lambda-carrageenan from Chondrus armatus were used to study the effect of water-soluble polysaccharides from seaweeds on the alternative pathway of complement (APC). **beta**-D-Glucans and **fucoidans** under study differed appreciably from each other by structural characteristics, and also by degree of purification. **beta**-D-glucans, on ability to bind complement, ranked in a line according to a degree of their purification. Highly purified **beta**-D-glucans under study did not reveal an ability to bind complement. The **fucoidans** were divided conventionally into three groups according to their action on APC. Highly sulfated alpha-L-fucan from L. cichorioides with the greatest activity toward APC and caused 50% inhibition of reaction of activation (RA) of APC in a concentration of 0.5-0.7 mg/ml. Opposite 50% of inhibition of lysis of erythrocytes by sulfated heterogeneous **fucoidan** from L. japonica was achieved with 20 mg/ml. All other

fucoidans and lambda-carrageenan have activity at 6-**10** mg/ml concentration. Decreasing the sulfate content from 36% up to 9% in sample **fucoidans** under study was not reflected practically in the 50% inhibition concentration. Apparently, the degree of sulfating of **fucoidans** did not influence their action on APC. But the positive influence of fucose in structure of polysaccharide was obvious.

L22 ANSWER 14 OF 81 MEDLINE on STN
ACCESSION NUMBER: 2000482270 MEDLINE
DOCUMENT NUMBER: PubMed ID: 10993801
TITLE: Thrombin and leukocyte recruitment in endotoxemia.
AUTHOR: Woodman R C; Teoh D; Payne D; Kubes P
CORPORATE SOURCE: Department of Medicine, University of Calgary, Calgary, Alberta, Canada T2N 4N1.. woodman@ucalgary.ca
SOURCE: American journal of physiology. Heart and circulatory physiology, (2000 Sep) 279 (3) H1338-45.
Journal code: 100901228. ISSN: 0363-6135.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200010
ENTRY DATE: Entered STN: 20001019
Last Updated on STN: 20001019
Entered Medline: 20001012

AB Because thrombin has been implicated in **sepsis**, it has been proposed that antithrombin III (AT III) is beneficial due to its anticoagulatory and antiadhesive effects. Using intravital microscopy, we visualized leukocyte-endothelium interactions in postcapillary venules of the feline mesentery exposed to lipopolysaccharide (LPS). At a concentration of AT III that blocks leukocyte adhesion in postischemic mesentery, we found no role for thrombin in LPS-induced rolling, adhesion and emigration, or microvascular dysfunction. Furthermore, AT III did not attenuate leukocyte-endothelial interactions after tumor necrosis factor-alpha superfusion of the mesentery. In contrast, **fucoidan**, a selectin inhibitor, prevented almost all LPS-induced rolling and reduced adhesion, emigration, and microvascular dysfunction. In a model of endotoxemia, leukocyte recruitment into mesentery or lungs was unaffected by AT III. Finally, in a human cell system that mimics the flow conditions in vivo, human neutrophils rolled, adhered, and emigrated similar to the feline postcapillary microvessels, and AT III had no effect on leukocyte recruitment induced by LPS. If AT III has beneficial effects in endotoxemia, it is not due to a direct effect upon leukocyte rolling, adhesion, or emigration in postcapillary venules in vivo.

L22 ANSWER 15 OF 81 MEDLINE on STN
ACCESSION NUMBER: 2000386464 MEDLINE
DOCUMENT NUMBER: PubMed ID: 10898496
TITLE: Role of selectins in experimental Staphylococcus aureus-induced arthritis.
AUTHOR: Verdrengh M; Erlandsson-Harris H; Tarkowski A
CORPORATE SOURCE: Department of Rheumatology, University of Goteborg, Sweden.. margareta.verdrengh@immuno.gu.se
SOURCE: European journal of immunology, (2000 Jun) 30 (6) 1606-13.
Journal code: 1273201. ISSN: 0014-2980.
PUB. COUNTRY: GERMANY: Germany, Federal Republic of
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200008
ENTRY DATE: Entered STN: 20000818
Last Updated on STN: 20000818
Entered Medline: 20000809

AB The selectin family of adhesion molecules mediates the initial attachment of leukocytes to venular endothelial cells at sites of tissue injury and inflammation. To assess the role of selectin family in Staphylococcus aureus-triggered **septic** arthritis, we used several approaches. First, treatment with **fucoidin**, a carbohydrate molecule capable of binding to and blocking selectin functions, was used. In addition, we used P-selectin gene-targeted mice as well as mice pretreated with monoclonal antibody blocking L-selectin function. The P-selectin-deficient and **fucoidin**-treated animals initially exhibited a less severe **septic** arthritis both clinically and histopathologically. In the later stages of the disease no significant differences with respect to arthritis were evident. Pretreatment with L-selectin blocking antibody did not influence the severity of arthritis.

High numbers of staphylococci were recovered from the kidneys of selectin-deficient mice, indicating a less efficient clearance of bacteria. Our results demonstrate a dual role for selectins in S. aureus-induced arthritis: on the one hand, blockade of these selectins leads to less severe arthritic lesions in the initial stage of the disease; on the other, delayed recruitment of phagocytes decreases the clearance of bacteria.

L22 ANSWER 16 OF 81 MEDLINE on STN
ACCESSION NUMBER: 2000039939 MEDLINE
DOCUMENT NUMBER: PubMed ID: 10570000
TITLE: Effect of recombinant boar **beta**-acrosin on sperm binding to intact zona pellucida during in vitro fertilization.
AUTHOR: Crosby J A; Barros C
CORPORATE SOURCE: Laboratory of Embryology, Faculty of Biological Science, Pontifical Catholic University of Chile, Santiago, Chile.. jcrosby@latinmail.com
SOURCE: Biology of reproduction, (1999 Dec) 61 (6) 1535-40. Journal code: 0207224. ISSN: 0006-3363.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199912
ENTRY DATE: Entered STN: 20000113
Last Updated on STN: 20000113
Entered Medline: 19991221

AB In a previous paper we demonstrated that boar **beta**-acrosin recombinant proteins were able to bind non-enzymatically to solubilized pig zona pellucida (ZP) glycoproteins. Here we report the participation of boar **beta**-acrosin in the secondary binding of sperm to intact pig ZP. This was achieved by using two boar recombinant proteins: **beta**-acrosin and a mutant of the catalytic site, **beta** -acrosin Ser/Ala(222). Assays of binding between the iodinated recombinant **beta**-acrosin and whole ZP showed that this binding could be saturated, was specific, and was stable over time. Using autoradiography, we determined that recombinant **beta**-acrosin bound on the entire surface of the ZP but initially was distributed heterogeneously. This suggests that the ligands for **beta** -acrosin may not be homogeneously distributed on the ZP. To study the contribution of acrosin in sperm secondary binding to the ZP, we preincubated in vitro-matured oocytes with these recombinant proteins and then performed in vitro fertilization assays. Under the experimental conditions used, binding of **beta**-acrosin recombinant proteins did not block sperm penetration. These results suggest that there may be other proteins that participate in the secondary binding, and that these proteins may recognize ligands that are different from those blocked by **beta**-acrosin recombinant proteins.

L22 ANSWER 17 OF 81 MEDLINE on STN
ACCESSION NUMBER: 1999448586 MEDLINE
DOCUMENT NUMBER: PubMed ID: 10519141
TITLE: Selectins and **beta** 2-integrins mediate post-ischaemic venular adhesion of polymorphonuclear leukocytes, but not capillary plugging, in isolated hearts.
AUTHOR: Habazettl H; Kupatt C; Zahler S; Becker B F; Messmer K
CORPORATE SOURCE: Institute for Surgical Research, University of Munich, Germany.. habazettl@icf.med.uni-muenchen.de
SOURCE: Pflugers Archiv : European journal of physiology, (1999 Sep) 438 (4) 479-85. Journal code: 0154720. ISSN: 0031-6768.
PUB. COUNTRY: GERMANY: Germany, Federal Republic of
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199911
ENTRY DATE: Entered STN: 20000111
Last Updated on STN: 20000111
Entered Medline: 19991122

AB Leukocytes adhering to venular endothelium and emigrating into the tissue contribute to myocardial reperfusion injury. The aim of the present study was to characterize the contribution of two different families of adhesion molecules, selectins and integrins, to post-ischaemic capillary plugging and venular adhesion of leukocytes in an isolated heart model. Guinea-pig hearts were perfused using the Langendorff technique. After 20 min

stabilization global ischaemia was induced for 15 min at 37 degrees C. With the onset of reperfusion **10**(7) isolated polymorphonuclear leukocytes (PMN), prelabelled with rhodamine 6G, were infused within 1 min. Perfusion was continued for 2 min to wash out all cells not firmly adhering to the vascular endothelium. Hearts were then arrested, mounted on a microscope stage and perfused with a cardioplegic solution containing 0.01% fluorescein isothiocyanate (FITC)-dextran (MW 150,000). In situ videofluorescence microscopy was used to quantify PMN plugging and adherent PMN. Four groups were studied: control (no treatment or ischaemia, n = 6); ischaemia (no treatment and 15 min ischaemia, n = 5); **fucoidin** (pretreatment of hearts and PMN with 0.3 mg/ml selectin inhibitor **fucoidin** and 15 min ischaemia, n = 5) and CD18 (pretreatment of PMN with 0.1 mg monoclonal antibody against CD18 and 15 min ischaemia, n = 5). Capillary plugging by PMN was 25 +/- 5 PMN/mm2 epicardial surface area and increased moderately to 55 +/- 6 PMN/mm2 in reperfused hearts. This increase was not affected by **fucoidin** or CD18 antibody. In contrast, post-ischaemic adhesion of PMN in small venules increased ninefold from 21 +/- 5 to 196 +/- 23 PMN/mm2 endothelial surface area. The increase in PMN adhesion to venular endothelium was blocked completely by pretreatment with **fucoidin** (19 +/- 5 PMN/mm-2) or CD18 antibody (7 +/- 2 PMN/mm-2). We conclude that selectin interaction alone is not sufficient to account for post-ischaemic PMN adhesion in the small venules of the coronary vasculature, because blocking the integrin subunit CD18 also inhibited PMN adhesion completely. On the other hand, neither integrins nor selectins seem to be involved in post-ischaemic capillary plugging by PMN in our perfused heart model.

L22 ANSWER 18 OF 81 MEDLINE on STN
ACCESSION NUMBER: 1998202674 MEDLINE
DOCUMENT NUMBER: PubMed ID: 9541593
TITLE: P-selectin binds to bacterial lipopolysaccharide.
AUTHOR: Malhotra R; Priest R; Foster M R; Bird M I
CORPORATE SOURCE: Glycobiology Research Unit, Glaxo-Wellcome Medicines Research Centre, Stevenage, GB.. RM18326@ggr.co.uk
SOURCE: European journal of immunology, (1998 Mar) 28 (3) 983-8. Journal code: 1273201. ISSN: 0014-2980.
PUB. COUNTRY: GERMANY: Germany, Federal Republic of
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199804
ENTRY DATE: Entered STN: 19980430
Last Updated on STN: 19980430
Entered Medline: 19980423

AB Multiple organ failure associated with disseminated intravascular coagulation is a frequent complication in **septic** shock patients. Accumulation of platelets and neutrophils in the organs contributes to the manifestation of lipopolysaccharide (LPS)-induced organ failure. Although a direct interaction between LPS and platelets is well documented, the nature of the surface receptor for LPS on platelets is unknown. In this article we show that P-selectin is a receptor for LPS. The binding of LPS to P-selectin is independent of Ca2+, and is blocked by antibodies to P-selectin, lipid A and **fucoidan**. Platelets pre-treated with thrombin showed fourfold higher binding of fluorescein isothiocyanate (FITC)-conjugated LPS compared to untreated platelets and the binding of FITC-conjugated LPS to platelets was blocked in the presence of anti-P-selectin antibodies. It is likely that the binding of LPS via P-selectin on activated platelets or epithelium could have a significant role in the pathophysiology of organ failure in **septic** shock.

L22 ANSWER 19 OF 81 MEDLINE on STN
ACCESSION NUMBER: 1998167513 MEDLINE
DOCUMENT NUMBER: PubMed ID: 9508094
TITLE: Characterization of the functional domains of boar acrosin involved in nonenzymatic binding to homologous zona pellucida glycoproteins.
AUTHOR: Crosby J A; Jones R; Barros C; Carvallo P
CORPORATE SOURCE: Department of Biochemistry, Faculty of Medicine, University of Chile, Santiago.. jcrosby@genes.bio.puc.cl
SOURCE: Molecular reproduction and development, (1998 Apr) 49 (4) 426-34. Journal code: 8903333. ISSN: 1040-452X.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals

OTHER SOURCE: SWISSPROT-A61022; SWISSPROT-P08001; SWISSPROT-P10323; SWISSPROT-P23578; SWISSPROT-P29293; SWISSPROT-P48038; SWISSPROT-S29599
ENTRY MONTH: 199805
ENTRY DATE: Entered STN: 19980529
Last Updated on STN: 19980529
Entered Medline: 19980515

AB During the first steps of the gamete interaction, the proacrosin/acrosin system seems to play a crucial role in the secondary binding, holding acrosome-reacted spermatozoa during their passage through the zona pellucida. To analyze the functional domains of acrosin, we decided to express recombinant boar acrosin proteins in bacteria and to study their binding capacities to zona pellucida glycoproteins (ZPGPs). The expressed proteins were immunodetected by Western blot with a polyclonal antiacrosin antibody. The recombinant truncated **beta**-acrosin has a typical hyperbolic curve of a zymogen enzymatic activation. Three of the five recombinant forms (truncated **beta**-acrosin, Ser/Ala222-truncated **beta**-acrosin, and truncated **beta**-acrosin "heavy chain") had the ability to bind ZPGPs. The two shorter forms (the amino and carboxy termini of truncated **beta**-acrosin) failed to bind. The catalytic site mutant (Ser/Ala222) of truncated **beta**-acrosin does not differ from the recombinant truncated **beta**-acrosin in its mechanism of interaction to ZPGPs, indicating that this secondary binding is done by a nonenzymatic process. Our results show that binding between acrosin and ZPGPs depends on the secondary and tertiary structures of acrosin and does not depend on an active catalytic site.

L22 ANSWER 20 OF 81 MEDLINE on STN
ACCESSION NUMBER: 97404555 MEDLINE
DOCUMENT NUMBER: PubMed ID: 9261276
TITLE: Evidence for prolonged cell-surface contact of acetyl-LDL before entry into macrophages.
AUTHOR: Zha X; Tabas I; Leopold P L; Jones N L; Maxfield F R
CORPORATE SOURCE: Department of Pathology, Columbia University, College of Physicians and Surgeons, New York, NY, USA.
CONTRACT NUMBER: HL-21006 (NHLBI)
HL-39703 (NHLBI)
HL-41990 (NHLBI)
+
SOURCE: Arteriosclerosis, thrombosis, and vascular biology, (1997 Jul) 17 (7) 1421-31.
Journal code: 9505803. ISSN: 1079-5642.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199709
ENTRY DATE: Entered STN: 19970916
Last Updated on STN: 19970916
Entered Medline: 19970904

AB Acetyl-LDL stimulates acyl-CoA:cholesterol acyltransferase (ACAT) much more effectively than LDL in mouse peritoneal macrophages. Previous work with another potent ACAT stimulator, **beta**-VLDL, suggested that atherogenic lipoproteins may use internalization pathways distinct from that of LDL. Brief incubation of fluorescently labeled acetyl-LDL and LDL followed by a short chase period without lipoproteins was used to compare endocytic pathways. LDL was delivered rapidly to perinuclear vesicles, corresponding to late endosomes and lysosomes. A substantial fraction (> 40%) of acetyl-LDL was initially retained in the cell periphery, while the rest was rapidly delivered to late endosomes that also contained LDL. Fluorescence of peripheral 1,1'-dioctadecyl-3,3,3', 3'-tetramethylindocarbocyanine perchlorate (DiI)-acetyl-LDL could be quenched by TNBS, indicating accessibility of the peripheral acetyl-LDL to the extracellular space. Quantification of fluorescence intensities demonstrated that > 40% of the cell-associated DiI-acetyl-LDL but only about **10%** of DiI-LDL fluorescence was quenchable by TNBS after a 3-minute chase. **Fucoidin** can efficiently displace DiI-acetyl-LDL bound to cells at 0 degree C. DiI-acetyl-LDL in the TNBS-quenchable peripheral compartments, however, was resistant to **fucoidin**. Electron microscopy of colloidal gold-acetyl-LDL showed that acetyl-LDL on the cell surface was often associated with microvilli or ruffles. After clearance from the surface, the peripheral acetyl-LDL was also delivered to the late endosomes and lysosomes. These results indicate that a substantial portion of acetyl-LDL enters macrophages through a pathway that initially differs from that of LDL. This pathway involves a prolonged retention of acetyl-LDL on the plasma membrane. This

surface retention may affect ACAT activation in macrophages.

L22 ANSWER 21 OF 81 MEDLINE on STN
ACCESSION NUMBER: 97394396 MEDLINE
DOCUMENT NUMBER: PubMed ID: 9252114
TITLE: Involvement of the HIV-1 external envelope glycoprotein 120 (gp120) C2 region in gp120 oligomerization.
AUTHOR: Seddiki N; Bouhlal H; Rabehi L; Benjouad A; Devaux C; Gluckman J C; Gattegno L
CORPORATE SOURCE: Laboratoire de Biologie Cellulaire, Faculte de Medecine Paris-Nord, Bobigny, France.
SOURCE: Biochimica et biophysica acta, (1997 Jul 18) 1340 (2) 277-82.
Journal code: 0217513. ISSN: 0006-3002.
PUB. COUNTRY: Netherlands
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals; AIDS
ENTRY MONTH: 199708
ENTRY DATE: Entered STN: 19970902
Last Updated on STN: 19970902
Entered Medline: 19970819

AB A synthetic peptide resembling the C2 region of human immunodeficiency virus type 1 (HIV-1) gp120 (C2-Lai: amino acids (aa) 273-288), inhibited (C50 = 200 microM) gp120 calcium-dependent binding of N-acetyl-**beta**-D-glucosaminyl and mannosyl residues exposed on natural glycoprotein bovine fetuin whereas a peptide derived from an aa sequence downstream of C2-Lai (C2-SC19) had no such effect (C50 > 1000 microM). No calcium-carbohydrate-specific binding of C2-Lai to fetuin was detected. In addition, C2-Lai was also found to inhibit the calcium-dependent oligomerization of gp120: while recombinant gp120 (rgp120) was recovered mainly as oligomers (78%) in **10** mM CaCl2, in contrast to 100% monomers in 1mM CaCl2, mostly monomers (67%) were found in **10** mM CaCl2 in the presence of C2-Lai. Peptide C2-SC19 and carbohydrate structures such as fetuin, **fucoidin**, dextran or mannan did not significantly affect gp120 oligomerization. Electrophoresis and gel filtration analysis also showed that C2-Lai aggregated in the form of 20 kDa compounds, which is compatible with association of **10** molecules. Taken together, these results demonstrate that the C2 domain is involved in gp120 oligomerization and suggest that gp120 oligomers but not monomers have specific carbohydrate binding properties.

L22 ANSWER 22 OF 81 MEDLINE on STN
ACCESSION NUMBER: 97129031 MEDLINE
DOCUMENT NUMBER: PubMed ID: 8973571
TITLE: Role for L-selectin in lipopolysaccharide-induced activation of neutrophils.
AUTHOR: Malhotra R; Priest R; Bird M I
CORPORATE SOURCE: Glycobiology Research Unit, Glaxo Wellcome Medicines Research Centre, Stevenage, Herts, 2NY, U.K.
SOURCE: Biochemical journal, (1996 Dec 1) 320 (Pt 2) 589-93.
Journal code: 2984726R. ISSN: 0264-6021.
PUB. COUNTRY: ENGLAND: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199701
ENTRY DATE: Entered STN: 19970219
Last Updated on STN: 19970219
Entered Medline: 19970127

AB The activation of leucocytes by bacterial cell wall lipopolysaccharide (LPS) contributes to the pathogenesis of **septic** shock. LPS is known to interact with several cell-surface proteins, including CD14, when presented as a complex with serum LPS-binding protein. However, the identity of the receptor responsible for LPS signalling and leucocyte activation is unknown. Interestingly, mice deficient in cell-surface L-selectin were dramatically resistant to the lethal effects of high doses of LPS in a model of **septic** shock. Recently we reported that L-selectin binds to cardiolipin and other charged phospholipids at a site distinct from the carbohydrate-binding site. Structural similarities between charged phospholipids and the lipid A moiety of LPS prompted us to investigate interactions between L-selectin and LPS. Herein we show that L-selectin is a neutrophil surface receptor for LPS and lipotechoic acid. The binding of LPS to L-selectin is independent of serum and Ca2+, and is blocked by antibodies to L-selectin and **fucoidan**. Furthermore, the interaction of LPS with cell-surface L-selectin results in superoxide

production, indicating that L-selectin can mediate both binding and activation of human neutrophils. These findings suggest novel therapeutic approaches for the treatment of **septic** shock.

L22 ANSWER 23 OF 81 MEDLINE on STN
ACCESSION NUMBER: 96049530 MEDLINE
DOCUMENT NUMBER: PubMed ID: 7578276
TITLE: Oversulfated **fucoidan** and heparin suppress endotoxin induction of plasminogen activator inhibitor-1 in cultured human endothelial cells: their possible mechanism of action.
AUTHOR: Soeda S; Fujii N; Shimeno H; Nagamatsu A
CORPORATE SOURCE: Department of Biochemistry, Faculty of Pharmaceutical Sciences, Fukuoka University, Japan.
SOURCE: Biochimica et biophysica acta, (1995 Oct 19) 1269 (1) 85-90.
Journal code: 0217513. ISSN: 0006-3002.
PUB. COUNTRY: Netherlands
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199512
ENTRY DATE: Entered STN: 19960124
Last Updated on STN: 19980206
Entered Medline: 19951212

AB Plasminogen activator inhibitor-1 (PAI-1) is a primary endogenous inhibitor of tissue-type plasminogen activator (t-PA). In this study, we examined the effects of oversulfated **fucoidan** (OSF) derivatives and heparin on lipopolysaccharide (LPS)-induced release of PAI-1 antigen from cultured human umbilical vein endothelial cells (HUVEC). Addition of LPS (**10** micrograms/ml) enhanced the release of PAI-1 by HUVEC but not of t-PA antigen. At 18 h, a 2.4-fold increase in the extracellular PAI-1 level was observed. The increased PAI-1 level was reduced to control level by the simultaneous addition of **10** micrograms/ml of OSF or heparin. The suppressive effect of native **fucoidan** was negligible. We also examined the molecular size effect of OSF, using **10**-20, 20-40, and 40-60 kDa fragments. The result indicated that these fragments were effective as well as the 100-130 kDa form of OSF, hence suggesting an important role of the degree of sulfation. Interleukin-1 **beta** (IL-1 **beta**) is a potent inducer of PAI-1 in cultured HUVEC. Heparin, OSF, and its fragments did not suppress the IL-1 **beta**-induced release of PAI-1 antigen. Treatment of HUVEC with heparitinase or monoclonal antibody against heparin sulfate proteoglycan (HSPG) resulted in a complete loss of its ability to enhance PAI-1 release in response to LPS stimulation, while the chondroitinase ABC treatment hardly affected the PAI-1 production. These results suggest that HSPG is involved in the initial binding of LPS to HUVEC. The suppressive effects of OSF and heparin on LPS-induced PAI-1 release may result from the inhibition of LPS binding to the cell surface HSPG.

L22 ANSWER 24 OF 81 MEDLINE on STN
ACCESSION NUMBER: 95142662 MEDLINE
DOCUMENT NUMBER: PubMed ID: 7530938
TITLE: Accumulation of fibronectin in articular cartilage explants cultured with TGF **beta** 1 and **fucoidan**.
COMMENT: Erratum in: Arch Biochem Biophys 1995 Jun 1;319(2):579
AUTHOR: Burton-Wurster N; Zhang D W; Lust G
CORPORATE SOURCE: James A. Baker Institute for Animal Health, College of Veterinary Medicine, Cornell University, Ithaca, New York 14853.
CONTRACT NUMBER: AR 35664 (NIAMS)
SOURCE: Archives of biochemistry and biophysics, (1995 Jan 10) 316 (1) 452-60.
Journal code: 0372430. ISSN: 0003-9861.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199503
ENTRY DATE: Entered STN: 19950314
Last Updated on STN: 19960129
Entered Medline: 19950302

AB Fibronectin is a glycoprotein involved in cell matrix interactions. In osteoarthritis, fibronectin levels in the lesion cartilage are elevated up to 20-fold above control levels. In these experiments, explants of

disease-free cartilage cultured in the presence of a combination of TGF **beta** 1 and the sulfated fucopolysaccharide, **fucoidan**, accumulated fibronectin at levels comparable to those found in osteoarthritic lesions. TGF **beta** 1 increased fibronectin synthesis, most of which was released to the medium. The addition of **fucoidan** favored retention of the newly synthesized fibronectin within the matrix. The fibronectin which accumulated as a result of these treatments was similar to the fibronectin in normal and osteoarthritic cartilage with respect to the ED-B+ alternative splice form. No change in the proteoglycan content of the cartilage explants with elevated fibronectin levels was detected.

L22 ANSWER 25 OF 81 MEDLINE on STN
ACCESSION NUMBER: 95137687 MEDLINE
DOCUMENT NUMBER: PubMed ID: 7835980
TITLE: Effects of the anti-inflammatory compounds castanospermine, mannose-6-phosphate and **fucoidan** on allograft rejection and elicited peritoneal exudates.
AUTHOR: Bartlett M R; Warren H S; Cowden W B; Parish C R
CORPORATE SOURCE: Division of Cell Biology, John Curtin School of Medical Research, Australian National University, Canberra.
SOURCE: Immunology and cell biology, (1994 Oct) 72 (5) 367-74.
Journal code: 8706300. ISSN: 0818-9641.
PUB. COUNTRY: Australia
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199503
ENTRY DATE: Entered STN: 19950314
Last Updated on STN: 19970203
Entered Medline: 19950302

AB The glycoprotein processing inhibitor castanospermine (CS) and the monosaccharide mannose-6-phosphate (M6P), as well as some sulfated polysaccharides (SPS), have been shown to inhibit inflammation in rat models of experimental **autoimmune** encephalomyelitis and adjuvant-induced arthritis. Here, the anti-inflammatory effects of these agents have been further explored in murine models of allograft rejection and elicitation of peritoneal exudates. CS, M6P and the SPS, **fucoidan**, partially inhibited rejection of permanently accepted thyroid allografts induced by the i.p. injection of donor strain (H-2d) spleen cells with a reduction in leucocyte infiltration of 25-36%. However none of these agents reduced the more extensive leucocyte infiltration induced by the i.p. injection of P815 (H-2d) unless recipient mice were pretreated with the immunosuppressant, cyclosporin A (CsA). Elicitation of peritoneal exudates by thioglycollate was inhibited by CS, M6P and **fucoidan** with sustained leucopenia being induced by CS. In contrast, CS and **fucoidan**, but not M6P, inhibited antigen-elicited peritoneal exudates. These results suggest that CS, M6P and the SPS **fucoidan** exhibit subtle differences in their anti-inflammatory activity but probably inhibit inflammation at the level of leucocyte extravasation.

L22 ANSWER 26 OF 81 MEDLINE on STN
ACCESSION NUMBER: 95130563 MEDLINE
DOCUMENT NUMBER: PubMed ID: 7829518
TITLE: Alternative splicing of ED-A and ED-B sequences of fibronectin pre-mRNA differs in chondrocytes from different cartilaginous tissues and can be modulated by biological factors.
AUTHOR: Zhang D W; Burton-Wurster N; Lust G
CORPORATE SOURCE: James A. Baker Institute for Animal Health, College of Veterinary Medicine, Cornell University, Ithaca, New York 14853.
CONTRACT NUMBER: AR35664 (NIAMS)
SOURCE: Journal of biological chemistry, (1995 Jan 27) 270 (4) 1817-22.
Journal code: 2985121R. ISSN: 0021-9258.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
OTHER SOURCE: GENBANK-U16207; GENBANK-U16208
ENTRY MONTH: 199502
ENTRY DATE: Entered STN: 19950307
Last Updated on STN: 19950307
Entered Medline: 19950222

AB The alternative splicing of the ED-A and ED-B segments of fibronectin pre-mRNA was examined in epiphyseal, costal, and meniscal cartilage from 3-week-old beagles and in nasal, tracheal, articular, and meniscal cartilage from 1- and 2-year-old Labrador retrievers. In contrast to the 100% expression of ED-B(+) mRNA that has been reported for embryonic chick cartilage (Bennett, V.D., Pallante, K.M., and Adams, S.K. (1991) J. Biol. Chemical 266, 5918-5924), all cartilages studied expressed both the ED-B(+) and ED-B(-) forms of fibronectin mRNA with the exception of the trachea, in which expression was 100% ED-B(-). Of all cartilages studied, only the meniscus had detectable levels of ED-A(+) mRNA. Placing articular cartilage chondrocytes in primary monolayer culture dramatically up-regulated the expression of ED-A(+) mRNA to 25% of the total, and this expression was further increased by the addition of **transforming growth factor beta** 1 or **fucoidan** to the culture medium. The expression of ED-B(+) mRNA remained at about 18% in the cultured chondrocytes and was not further affected by either **transforming growth factor beta** 1 or **fucoidan**. In contrast, dibutyryl cyclic adenosine monophosphate decreased the relative expression of both the ED-A(+) and ED-B(+) forms of fibronectin pre-mRNA. We concluded that the expression of ED-B(+) fibronectin remains relatively high in chondrocytes from cartilaginous canine tissues (15-35%) with the exception of the trachea, in contrast to the less than **10%** expression of ED-B(+) fibronectin reported for other non-fetal tissues.

L22 ANSWER 27 OF 81 MEDLINE on STN
ACCESSION NUMBER: 95030780 MEDLINE
DOCUMENT NUMBER: PubMed ID: 7524408
TITLE: Alpha 2-macroglobulin/**transforming growth factor-beta** 1 interactions. Modulation by heparin-like molecules and effects on vascular smooth muscle cells.
AUTHOR: McCaffrey T A; Falcone D J; Borth W; Weksler B B
CORPORATE SOURCE: Department of Medicine, Cornell University Medical College, New York 10021.
CONTRACT NUMBER: R29-HL42606 (NHLBI)
RO1-HL35724 (NHLBI)
RO1-HL40819 (NHLBI)
+
SOURCE: Annals of the New York Academy of Sciences, (1994 Sep 10) 737 368-82.
Journal code: 7506858. ISSN: 0077-8923.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199411
ENTRY DATE: Entered STN: 19941222
Last Updated on STN: 20000303
Entered Medline: 19941114

L22 ANSWER 28 OF 81 MEDLINE on STN
ACCESSION NUMBER: 94363380 MEDLINE
DOCUMENT NUMBER: PubMed ID: 7521750
TITLE: A glycoprotein expressed by human fibrous astrocytes is a hyaluronate-binding protein and a member of the CD44 family.
AUTHOR: da Cruz L A; Cruz T F; Moscarello M A
CORPORATE SOURCE: Department of Biochemistry, Hospital for Sick Children, Toronto, Ontario, Canada.
SOURCE: Cell adhesion and communication, (1993 May) 1 (1) 9-20.
Journal code: 9417027. ISSN: 1061-5385.
PUB. COUNTRY: Switzerland
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199410
ENTRY DATE: Entered STN: 19941021
Last Updated on STN: 19960129
Entered Medline: 19941010

AB We have isolated and characterized an antigen from normal human brain called p80, so called because it migrated with an M(r) of 80 kDa on SDS PAGE. The M(r) of 80 kDa consists of a protein of about 55-60 kDa and carbohydrate (20-25 kDa). The carbohydrate is almost entirely of the N-linked type, although a small amount of O-linked carbohydrate was detected. Cross-reactivity with monoclonal antibodies A3D8 and A1G3

showed that p80 could therefore be considered an isoform of the CD44 adhesion molecules. In addition, specific binding to hyaluronate which was not competed for by proteoglycan demonstrated that it involved different sites than the proteoglycan binding sites. We also observed that **fucoidan** and dextran sulphate increased the binding by 200-250% while chondroitin sulphate C also increased the binding but to a lesser extent. Heparin, heparan sulphate and chondroitin sulphates A and B did not have such an effect. The binding of p80 to hyaluronate was pH dependent with a maximum at pH 6.4. We concluded that p80 was an astrocyte specific adhesion molecule.

L22 ANSWER 29 OF 81 MEDLINE on STN
ACCESSION NUMBER: 94238519 MEDLINE
DOCUMENT NUMBER: PubMed ID: 8182587
TITLE: Some effects of zona pellucida glycoproteins and sulfated polymers on the autoactivation of boar sperm proacrosin and activity of **beta**-acrosin.
AUTHOR: Lo Leggio L; Williams R M; Jones R
CORPORATE SOURCE: Department of Development and Signalling, AFRC Babraham Institute, Cambridge, UK.
SOURCE: Journal of reproduction and fertility, (1994 Jan) 100 (1) 177-85.
Journal code: 0376367. ISSN: 0022-4251.
PUB. COUNTRY: ENGLAND: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199406
ENTRY DATE: Entered STN: 19940621
Last Updated on STN: 19940621
Entered Medline: 19940614

AB The effects of zona pellucida glycoproteins, sulfated polymers and non-sulfated polymers on the activation kinetics of boar sperm proacrosin to **beta**-acrosin have been investigated. The aim has been to understand more about the behaviour and function of this protein after it has been released from the acrosome at the time of fertilization. Purified proacrosin was allowed to autoactivate at pH 8.0 in the presence of different concentrations of homologous zona glycoproteins, sulfated polymers (**fucoidan**, chondroitin sulfates A, B and C, dextran sulfate, polyvinylsulfate and heparin) and non-sulfated polymers (dextran, polyvinylphosphate and hyaluronic acid). Enzyme activity was measured against N-benzoyl-L-arginine p-nitroanalide substrate and changes in molecular mass of the protein monitored by SDS-PAGE. Results show that zona pellucida glycoproteins, **fucoidan**, dextran sulfate and polyvinylsulfate all potentiate the conversion of proacrosin to **beta**-acrosin but subsequently inhibit its amidase activity. Dextran, polyvinylphosphate, chondroitin sulfates A, B and C and glucose-6-sulfate, on the other hand, either have no effect on autoactivation and **beta**-acrosin activity, or enhance it slightly. SDS-PAGE analysis confirmed these observations and further indicated that binding of sulfated polymers to proacrosin inhibited staining by Coomassie Blue. These results are consistent with the hypothesis that binding of zona pellucida glycoproteins and sulfated compounds to proacrosin/acrosin is stereospecific and that contact activation onto soluble 'surfaces' causes conformational changes that are responsible for potentiation or inhibition of activation. The implications of these findings for sperm binding and penetration of the zona pellucida are discussed.(ABSTRACT TRUNCATED AT 250 WORDS)

L22 ANSWER 30 OF 81 MEDLINE on STN
ACCESSION NUMBER: 94186565 MEDLINE
DOCUMENT NUMBER: PubMed ID: 7511146
TITLE: Protection of **transforming growth factor-beta** 1 activity by heparin and **fucoidan**.
AUTHOR: McCaffrey T A; Falcone D J; Vicente D; Du B; Consigli S; Borth W
CORPORATE SOURCE: Department of Medicine, Cornell University Medical College, New York, New York 10021.
CONTRACT NUMBER: HL01962 (NHLBI)
HL18828 (NHLBI)
HL42606 (NHLBI)
+
SOURCE: Journal of cellular physiology, (1994 Apr) 159 (1) 51-9.
Journal code: 0050222. ISSN: 0021-9541.
PUB. COUNTRY: United States

DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199404
ENTRY DATE: Entered STN: 19940509
Last Updated on STN: 19960129
Entered Medline: 19940422

AB The **transforming growth factor-beta** (TGF-**beta**) family of proteins exert diverse and potent effects on proliferation, differentiation, and extracellular matrix synthesis. However, relatively little is known about the stability or processing of endogenous TGF-**beta** activity in vitro or in vivo. Our previous work indicated that 1) TGF-**beta** 1 has strong heparin-binding properties that were not previously recognized because of neutralization by iodination, and 2) heparin, and certain other polyanions, could block the binding of TGF-**beta** 1 to alpha 2-macroglobulin (alpha 2-M). The present studies investigated the influence of heparin-like molecules on the stability of the TGF-**beta** 1 signal in the pericellular environment. The results indicate that heparin and **fucoidan**, a naturally occurring sulfated L-fucose polymer, suppress the formation of an initial non-covalent interaction between 125I-TGF-**beta** 1 and activated alpha 2-M. Electrophoresis of 125I-TGF-**beta** 1 showed that **fucoidan** protects TGF-**beta** 1 from proteolytic degradation by plasmin and trypsin. While plasmin caused little, if any, activation of latent TGF-**beta** derived from vascular smooth muscle cells (SMC), plasmin degraded acid-activated TGF-**beta**, and purified TGF-**beta** 1, and this degradation was inhibited by **fucoidan**. In vitro, heparin and **fucoidan** tripled the half-life of 125I-TGF-**beta** 1 and doubled the amount of cell-associated 125I-TGF-**beta** 1. Consistent with this protective effect, heparin- and **fucoidan**-treated SMC demonstrated elevated levels of active, but not latent, TGF-**beta** activity.

L22 ANSWER 31 OF 81 MEDLINE on STN
ACCESSION NUMBER: 94176434 MEDLINE
DOCUMENT NUMBER: PubMed ID: 8130161
TITLE: Atherosclerosis-associated changes in the carbohydrate-binding capacities of smooth muscle cells of various human arteries.
AUTHOR: Kayser K; Bartels S; Yoshida Y; Fernandez-Britto J; Gabius H J
CORPORATE SOURCE: Department of Pathology, Thoraxklinik, Heidelberg, Germany.
SOURCE: Zentralblatt fur Pathologie, (1993 Nov) 139 (4-5) 307-12.
Journal code: 9105594. ISSN: 0863-4106.
PUB. COUNTRY: GERMANY: Germany, Federal Republic of
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199404
ENTRY DATE: Entered STN: 19940428
Last Updated on STN: 19940428
Entered Medline: 19940415

AB A set of labelled neoglycoproteins and sulfated polysaccharides, recognizing carbohydrate receptors specific for glucose (glu), mannose (man), lactose (lac), fucose (fuc), **fucoidan** (fud), dextran sulfate (dex), and heparin (hep), as well as polyclonal antibodies specific for an endogenous **beta**-galactoside-specific lectin of molecular weight 14kD (A14kD) and a heparin-binding lectin (AHL) have been applied to the main arteries of **10** autopsy cases. Slides of the following types of vessels were incubated with solutions of the biotinylated probes or antibodies at room temperature for 60 min: right and left coronary artery, carotid artery, abdominal and thoracic aorta, pulmonal artery, and the left femoral artery. Atherosclerotic lesions and non-atherosclerotic areas were analyzed for each individual type of vessel. The percentage of the determined expression of the presence of specific binding sites for the various probes was the lowest in the carotid and cardiac arteries, and the highest in the pulmonal artery. Pronounced quantitative differences between the normal and atherosclerotic arterial walls were noted for binding of fuc-, man-, and lac-exposing neoglyco-proteins of the right coronary artery and the carotid artery. Pulmonal and femoral arteries differed with respect to **fucoidan** or dextran sulfate binding. The heparin-specific lectin and the 14kD-lectin were found to be present in nearly all arterial walls, independent from the localization and the presence of an atherosclerotic lesion. The findings suggest that the expression of sugar receptors, as

assessed by labelled neoglycoproteins or sulfated polysaccharides, may be of importance in the development of atherosclerotic lesions in the coronary and carotid arteries.

L22 ANSWER 32 OF 81 MEDLINE on STN
ACCESSION NUMBER: 94110367 MEDLINE
DOCUMENT NUMBER: PubMed ID: 8282826
TITLE: Stimulation with a monoclonal antibody (mAb4E4) of scavenger receptor-mediated uptake of chemically modified low density lipoproteins by THP-1-derived macrophages enhances foam cell generation.
AUTHOR: Holvoet P; Perez G; Bernar H; Brouwers E; Vanloo B; Rosseneu M; Collen D
CORPORATE SOURCE: Center for Molecular and Vascular Biology, University of Leuven, Belgium.
SOURCE: Journal of clinical investigation, (1994 Jan) 93 (1) 89-98. Journal code: 7802877. ISSN: 0021-9738.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Abridged Index Medicus Journals; Priority Journals
ENTRY MONTH: 199402
ENTRY DATE: Entered STN: 19940228
Last Updated on STN: 19970203
Entered Medline: 19940217

AB mAb4E4, a murine monoclonal antibody that is specific for acetylated LDL and malondialdehyde-treated LDL, binds specifically to modified LDL present in human atherosclerotic lesions. It is directed against an epitope that is poorly exposed in delipidated and solubilized apolipoprotein B-100 from modified LDL. mAb4E4, as well as its F(ab')2 and Fab fragments, enhanced the uptake of both acetylated LDL and malondialdehyde-treated LDL by THP-1-derived macrophages resulting in a sixfold increase of cytoplasmic cholesteryl ester levels. The increased uptake of modified LDL/mAb4E4 complexes did not occur via the Fc receptor and did not depend on aggregation of modified LDL particles. However, their uptake was inhibited by blocking the scavenger receptors with **fucoidin** or by downregulation of receptor expression with endotoxins or interferon-gamma, indicating that their uptake is mediated via these receptors. Thus, generation of **autoimmune** antibodies against modified LDL and subsequent endocytosis of soluble modified LDL/antibody complexes via scavenger receptors may enhance foam cell generation. This mechanism may contribute to the progression of atherosclerotic lesions.

L22 ANSWER 33 OF 81 MEDLINE on STN
ACCESSION NUMBER: 93216708 MEDLINE
DOCUMENT NUMBER: PubMed ID: 8463286
TITLE: High affinity binding, endocytosis, and degradation of conformationally modified albumins. Potential role of gp30 and gp18 as novel scavenger receptors.
AUTHOR: Schnitzer J E; Bravo J
CORPORATE SOURCE: Department of Medicine and Pathology, University of California-San Diego, School of Medicine, La Jolla 92093-0651.
CONTRACT NUMBER: HL43278 (NHLBI)
SOURCE: Journal of biological chemistry, (1993 Apr 5) 268 (10) 7562-70. Journal code: 2985121R. ISSN: 0021-9258.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199305
ENTRY DATE: Entered STN: 19930521
Last Updated on STN: 19970203
Entered Medline: 19930505

AB Scavenger receptors interact with a variety of modified proteins, mediate their endocytosis and degradation, and may play an important role in protein catabolism and pathogenic processes such as atherosclerosis, aging, and **diabetes**. Many scavenger receptors have been detected kinetically but few such binding proteins have actually been identified. Recently, we found that two membrane-associated proteins, gp30 and gp18, interact more avidly with albumins conformationally modified by chemical means or by surface adsorption to colloidal gold particles than with native albumin. In this study, we show that gp30 and gp18 behave similarly to other known scavenger receptors. Competition

studies indicate a similar ligand binding profile to other known scavenger receptors. Polyanionic molecules (dextran sulfate, **fucoidan**, polyglutamic acid, polyinosinic acid, heparin) and modified albumins such as formaldehyde-treated or maleylated albumin (Mal-bovine serum albumin) competed with albumin conjugated to colloidal gold particles (A-Au) for the blotting of gp30 and gp18. A-Au and Mal-bovine serum albumin bound cultured endothelial cells with high affinity. Modified and native albumins were each internalized, but only modified albumins were then released degraded. Inhibition studies revealed that only the same molecules that were effective in blocking A-Au blotting of gp30 and gp18, also inhibited A-Au degradation. Addition of the lysosomotropic agent chloroquine resulted in more than 70% inhibition of degradation. Differential processing of A-Au by cultured smooth muscle and endothelial cells along with fibroblasts was observed in a manner consistent with gp30 and gp18 expression. Cumulatively, these results suggest that gp30 and gp18 may mediate the high affinity binding, endocytosis, and degradation of conformationally modified albumins but not native albumin.

L22 ANSWER 34 OF 81 MEDLINE on STN
ACCESSION NUMBER: 92246965 MEDLINE
DOCUMENT NUMBER: PubMed ID: 1315533
TITLE: **Fucoidan** is a non-anticoagulant inhibitor of intimal hyperplasia.
AUTHOR: McCaffrey T A; Falcone D J; Borth W; Brayton C F; Weksler B B
CORPORATE SOURCE: Department of Medicine, Cornell University Medical College, New York, NY 10021.
CONTRACT NUMBER: HL01962 (NHLBI)
HL35724 (NHLBI)
HL42606 (NHLBI)
+
SOURCE: Biochemical and biophysical research communications, (1992 Apr 30) 184 (2) 773-81.
Journal code: 0372516. ISSN: 0006-291X.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199206
ENTRY DATE: Entered STN: 19920619
Last Updated on STN: 19920619
Entered Medline: 19920602

AB We previously reported that heparin inhibits the proliferation of fibroblasts and vascular smooth muscle cells (SMC), in part, by binding to and increasing the antiproliferative activity of **transforming growth factor-beta** 1 (TGF-**beta** 1). We now report that certain other polyanions which are structurally distinct from heparin, such as **fucoidan** and polyinosinic acid, are more avid ligands for TGF-**beta** 1 and more potent antiproliferative agents than heparin. **Fucoidan** possessed more potent antiproliferative activity than heparin against rat and bovine aortic SMC in vitro, though possessing much lower anticoagulant activity than heparin. Furthermore, **fucoidan** suppressed in vivo intimal hyperplasia when continuously infused into rats subjected to balloon-catheter injury. Unlike heparin, which also suppressed intimal hyperplasia, **fucoidan** did not cause systemic anticoagulation. Thus, **fucoidan** may be useful as a non-anticoagulant inhibitor of post-angioplasty intimal hyperplasia.

L22 ANSWER 35 OF 81 MEDLINE on STN
ACCESSION NUMBER: 92170572 MEDLINE
DOCUMENT NUMBER: PubMed ID: 1793032
TITLE: Evidence for the involvement of carbohydrate moieties in the adhesion of U937 cells to tumor necrosis factor-alpha (TNFalpha)-stimulated vascular endothelium in vitro.
AUTHOR: Sung C P; Strorer B; Arleth A; Stadel J; Feuerstein G
CORPORATE SOURCE: Department of Pharmacology, SmithKline Beecham Pharmaceuticals, King of Prussia, PA 19406.
SOURCE: Agents and actions, (1991 Sep) 34 (1-2) 205-7.
Journal code: 0213341. ISSN: 0065-4299.
PUB. COUNTRY: Switzerland
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199203
ENTRY DATE: Entered STN: 19920417

Last Updated on STN: 19920417
Entered Medline: 19920331

AB Treatment of U937 cells with fructose 1-phosphate (P) and **fucoidan** dose-dependently inhibited the adhesion of these monocytic cells to TNF alpha-stimulated human umbilical vein endothelial cells (HUVEC) (IC50 = 1 mM and **10** micrograms/ml respectively). These carbohydrates (CHO) failed to inhibit U937 adhesion to unstimulated (basal) HUVEC or phorbol 12, 13 dibutyrate (PdBu)-stimulated HUVEC. At **10** mM concentration, both fucose 1-P and lactose 1-P inhibited TNF alpha-stimulated adhesion while the latter also inhibited basal adhesion. Fructose 6-P, fucose, galactose 1-P, glucose 1-P, glucose 6-P, glucuronic acid, **beta**-glycerol 1-P, mannose 1-P, mannose 6-P, ribose 1-P and ribose 5-P tested at **10** mM did not inhibit U937 cells adhesion to basal or TNF alpha-stimulated HUVEC. These data suggest that CHO may play an important role in modulating monocytes adhesion to cytokine-induced adhesion molecule(s) on the surface of HUVEC.

L22 ANSWER 36 OF 81 MEDLINE on STN
ACCESSION NUMBER: 92103676 MEDLINE
DOCUMENT NUMBER: PubMed ID: 1662117
TITLE: A hepatic reticuloendothelial cell receptor specific for SO4-4GalNAc **beta** 1,4GlcNAc **beta** 1,2Man alpha that mediates rapid clearance of lutropin.
COMMENT: Comment in: Cell. 1991 Dec 20;67(6):1029-32. PubMed ID: 1662115
AUTHOR: Fiete D; Srivastava V; Hindsgaul O; Baenziger J U
CORPORATE SOURCE: Department of Pathology, Washington University School of Medicine, St. Louis, Missouri 63110.
CONTRACT NUMBER: R37-CA-21923 (NCI)
R01-DK-41738 (NIDDK)
SOURCE: Cell, (1991 Dec 20) 67 (6):1103-10.
Journal code: 0413066. ISSN: 0092-8674.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199202
ENTRY DATE: Entered STN: 19920302
Last Updated on STN: 19920302
Entered Medline: 19920211

AB We have identified a receptor in hepatic endothelial and Kupffer cells that binds oligosaccharides terminating with the sequence SO4-4GalNAc **beta** 1,4GlcNAc **beta** 1,2-Man alpha (S4GGnM). This receptor can account for the rapid removal of the glycoprotein hormone lutropin, which bears unique Asn-linked oligosaccharides terminating in S4GGnM, from the circulation. Hepatic endothelial cells express 579,000 S4GGnM receptors at their surface and bind lutropin with an apparent Kd of 1.63 x **10**(-7) M. Bound ligand is rapidly internalized. Binding does not require divalent cations, is reversed by incubation at pH 5.0 or below, and is inhibited by **fucoidin** but not by hyaluronate, heparin, chondroitin sulfate, or dextran sulfate. We propose that the S4GGnM-specific receptor represents a major mechanism for clearance of certain sulfated glycoproteins from the blood, including members of the glycoprotein hormone family.

L22 ANSWER 37 OF 81 MEDLINE on STN
ACCESSION NUMBER: 92062416 MEDLINE
DOCUMENT NUMBER: PubMed ID: 1954031
TITLE: Activation and subsequent degradation of proacrosin is mediated by zona pellucida glycoproteins, negatively charged polysaccharides, and DNA.
AUTHOR: Eberspaecher U; Gerwien J; Habenicht U F; Schleuning W D; Donner P
CORPORATE SOURCE: Research Laboratories of Schering AG, Berlin, Federal Republic of Germany.
SOURCE: Molecular reproduction and development, (1991 Oct) 30 (2) 164-70.
Journal code: 8903333. ISSN: 1040-452X.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199201
ENTRY DATE: Entered STN: 19920124
Last Updated on STN: 19920124
Entered Medline: 19920102

AB Boar proacrosin (E.C. 3.4.21.**10**, Mw 53 kD) was isolated by a modified method and subjected to autoactivation. Previously described molecular intermediates of 49 and 43 kD and a stable form (**beta** -acrosin, 35 kD) were identified by sodium dodecyl sulfate-polyacrylamide gel electrophoresis. Autoactivation was expedited in the presence of either zona pellucida glycoproteins, **fucoidan**, or DNA. The end point of this accelerated conversion was the complete degradation of otherwise stable **beta**-acrosin via the formation of a characteristic active intermediate protein of 30 kD. All intermediate molecular forms observed during proacrosin activation/conversion exhibited the N-terminal sequence of the boar acrosin heavy chain, indicating a C-terminal processing mechanism. Hence zona pellucida glycoproteins stimulate proacrosin activation as well as acrosin degradation. Such a mechanism of proenzyme activation and degradation is to our knowledge described here for the first time and points to a previously unrecognized role of zona pellucida during gamete interaction.

L22 ANSWER 38 OF 81 MEDLINE on STN
ACCESSION NUMBER: 91250487 MEDLINE
DOCUMENT NUMBER: PubMed ID: 2040655
TITLE: Heparin augments osteoclast resorption-stimulating activity in serum.
AUTHOR: Fuller K; Chambers T J; Gallagher A C
CORPORATE SOURCE: Department of Pathology, St George's Hospital Medical School, London, England.
CONTRACT NUMBER: AR39623 (NIAMS)
SOURCE: Journal of cellular physiology, (1991 May) 147 (2) 208-14. Journal code: 0050222. ISSN: 0021-9541.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199107
ENTRY DATE: Entered STN: 19910728
Last Updated on STN: 19910728
Entered Medline: 19910710

AB Increased numbers of mast cells are commonly seen at sites of increased bone resorption and in osteoporosis. Long-term administration of heparin, a major component of mast cell granules, causes osteoporosis. We therefore tested the effect of heparin on bone resorption by osteoclasts disaggregated from neonatal rat long bones. We found that, in the absence of serum, heparin was without effect on osteoclast function. However, in the presence of newborn calf serum, rat serum, or bovine platelet-poor plasma-derived serum, heparin, in the range 25-100 micrograms/ml, induced an increase in osteoclastic bone resorption. Heparin appeared to act through binding and enhancement of an osteoclast resorption-stimulating activity (ORSA) present in serum. A number of known factors that show an affinity for heparin, including **transforming growth factor-beta**, platelet-derived growth factors, insulin-like growth factors I or II, acidic or basic fibroblast growth factors, fibronectin, or laminin, could not substitute for ORSA, suggesting that the activity may represent a novel heparin-binding factor. The ability of glycosaminoglycans (GAGs) and related molecules to enhance resorption was dependent on the degree of sulfation and on their size: The high molecular weight GAG heparan sulfate and polysaccharides **fucoidan** or dextran sulfate showed a similar effect, while low molecular weight heparin, chondroitin-2-sulfate, chondroitin-4-sulfate, and chondroitin-6-sulfate were without effect. We propose that mast cells or heparin therapy increases bone resorption through augmentation of the activity of a factor involved in the local and systemic regulation of osteoclastic bone resorption.

L22 ANSWER 39 OF 81 MEDLINE on STN
ACCESSION NUMBER: 89197199 MEDLINE
DOCUMENT NUMBER: PubMed ID: 2467870
TITLE: Histopathologic evaluation of application of labeled neoglycoproteins in primary bronchus carcinoma.
AUTHOR: Kayser K; Gabius H J; Ciesiolka T; Ebert W; Bach S
CORPORATE SOURCE: Department of Pathology, Thoraxklinik Heidelberg-Rohrbach, FRG.
SOURCE: Human pathology, (1989 Apr) 20 (4) 352-60. Journal code: 9421547. ISSN: 0046-8177.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals

ENTRY MONTH: 198905
ENTRY DATE: Entered STN: 19900306
Last Updated on STN: 19900306
Entered Medline: 19890512

AB Neoglycoproteins are readily available conjugates of a histochemically inert carrier protein and histochemically crucial carbohydrate moieties which are covalently attached to the carrier protein by chemical synthesis. Biotinylation renders these conjugates detectable in formalin-fixed, paraffin-embedded tissue sections of human lung cancer by standard staining protocols, thereby localizing endogenous receptors for carbohydrate moieties. Examination of 30 cases of main types of human lung cancer revealed the presence of alpha-fucosyl-, alpha-mannosyl-, and alpha-glucosyl-specific receptors in adenocarcinomas or epidermoid carcinomas with high positivity rates. The extent of the expression of receptors for alpha- and **beta**-galactosides appeared to be comparatively lower. Within the standard protocol, using a concentration of the biotinylated probes of **10** micrograms/mL, this panel of probes consistently failed to detect endogenous sugar receptors in ten cases of small cell anaplastic carcinoma of the lung. Whereas none of the sections from the tumor cases bound the sulfated fucan **fucoidan**, the accompanying inflammatory cells, especially the granulocytes, expressed receptors for the sulfated fucan. Pronounced labeling for macrophages was observed for the alpha-galactoside-specific probe, whereas no binding to inflammatory cells and pneumocytes was detectable for the **beta**-galactoside-specific probe. The results indicate that expression of endogenous receptors for neoglycoproteins may be useful in discriminating between small cell and non-small cell lung carcinoma and carcinomatous cells from accompanying inflammatory cells.

L22 ANSWER 40 OF 81 MEDLINE on STN
ACCESSION NUMBER: 88198980 MEDLINE
DOCUMENT NUMBER: PubMed ID: 2452187
TITLE: Inhibition of allergic encephalomyelitis in rats by treatment with sulfated polysaccharides.
AUTHOR: Willenborg D O; Parish C R
CORPORATE SOURCE: Neurosciences Research Unit, Royal Canberra Hospital, Australia.
SOURCE: Journal of immunology (Baltimore, Md. : 1950), (1988 May 15) 140 (10) 3401-5.
Journal code: 2985117R. ISSN: 0022-1767.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Abridged Index Medicus Journals; Priority Journals
ENTRY MONTH: 198806
ENTRY DATE: Entered STN: 19900308
Last Updated on STN: 20000303
Entered Medline: 19880609

AB A number of sulfated polysaccharides were tested for their ability to inhibit passively induced experimental allergic encephalomyelitis (EAE) in rats. Heparin and **fucoidan** both completely inhibited passive EAE even when treatment was begun 3 days after transfer of cells. Pentosan sulfate was partially inhibitory whereas chondroitin-4-sulfate had no effect. Inhibition was not merely due to killing of the cells since active sensitization 14 days after cell transfer resulted in an early onset of disease indicating the persistence of transferred cells as memory cells. Although all the inhibitory polysaccharides are anticoagulants, it would appear that this function alone is not the reason for inhibition since a heparin preparation devoid of anticoagulant activity also partially inhibited EAE. Actively induced EAE was also significantly delayed by treatment with heparin. The results are discussed in terms of the polysaccharides inhibiting the enzymatic dependent movement of lymphocytes across central nervous system vascular endothelium.

L22 ANSWER 41 OF 81 MEDLINE on STN
ACCESSION NUMBER: 87326560 MEDLINE
DOCUMENT NUMBER: PubMed ID: 3632753
TITLE: The effect of thermally oxidized soya bean oil on metabolism of chylomicrons. Increased uptake and degradation of oxidized chylomicrons in cultured mouse macrophages.
AUTHOR: Naruszewicz M; Wozny E; Mirkiewicz E; Nowicka G; Szostak W B
SOURCE: Atherosclerosis, (1987 Jul) 66 (1-2) 45-53.
Journal code: 0242543. ISSN: 0021-9150.

PUB. COUNTRY: Netherlands
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198710
ENTRY DATE: Entered STN: 19900305
Last Updated on STN: 19900305
Entered Medline: 19871021

AB Oral administration of thermally oxidized soya bean oil (TO) increased the level of lipid peroxides in human plasma, mainly in chylomicrons. No changes were observed after fresh oil (FO) intake. Human chylomicrons obtained after TO ingestion were rich in lipid peroxides and degraded more rapidly by cultured mouse macrophages than chylomicrons after FO. The uptake of TO chylomicrons by macrophages occurred via a saturable process and was partially inhibited by **beta**-very low density lipoprotein as well as by acetyl-low density lipoprotein and **fucoidin**. A 48-h incubation of macrophages with TO chylomicrons caused a **10** -fold higher accumulation of cholesterol ester mass in the cells than the incubation with FO chylomicrons. These studies suggest that chylomicrons containing lipid peroxides may be taken up by mouse macrophages by mediation of **beta**-VLDL receptor as well as by acetyl-LDL receptor, and show a potential pathway by which chylomicrons obtained after ingestion of heated oil could contribute to accumulation of cholesterol esters in macrophages.

L22 ANSWER 42 OF 81 MEDLINE on STN
ACCESSION NUMBER: 85209166 MEDLINE
DOCUMENT NUMBER: PubMed ID: 3923098
TITLE: Studies on antigens associated with the activation of murine mononuclear phagocytes: kinetics of and requirements for induction of lymphocyte function-associated (LFA)-1 antigen in vitro.
AUTHOR: Strassmann G; Springer T A; Adams D O
CONTRACT NUMBER: CA-167894 (NCI)
CA-29589 (NCI)
CA-31799 (NCI)
+
SOURCE: Journal of immunology (Baltimore, Md. : 1950), (1985 Jul) 135 (1) 147-51.
Journal code: 2985117R. ISSN: 0022-1767.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Abridged Index Medicus Journals; Priority Journals
ENTRY MONTH: 198507
ENTRY DATE: Entered STN: 19900320
Last Updated on STN: 19970203
Entered Medline: 19850724

AB Macrophages activated and primed in vivo, although not resident or responsive macrophages, express the lymphocyte function associated (LFA)-1 antigen. By contrast, the biochemically related Mac-1 antigen is expressed on all populations of macrophages. In the present paper, we studied regulation of the LFA-1 antigen in vitro. LFA-1 could be induced in vitro on thioglycollate (TG)-elicited but not on proteose peptone (PP)-elicited or resident macrophages. Specifically, macrophage-activating factor (MAF), interferon-gamma (IFN-gamma), or picogram amounts of endotoxin (LPS) induced LFA-1 on TG-elicited macrophages following overnight incubation. Interferon, -alpha or -**beta**, **fucoidin**, and colony-stimulating factor were not effective. While some levels of LFA-1 could be detected as soon as **10** hr, peak expression was observed after 16 to 32 hr of incubation. The induction could be completely abrogated by cycloheximide, suggesting that protein synthesis was required. These results indicate that the induction of LFA-1 on mononuclear phagocytes is closely regulated and that the requirements for such induction are distinct from but share certain similarities with induction of cytotoxic functions and expression of Ia antigen.

L22 ANSWER 43 OF 81 MEDLINE on STN
ACCESSION NUMBER: 83007475 MEDLINE
DOCUMENT NUMBER: PubMed ID: 7119010
TITLE: Carbohydrate specificity of sea urchin sperm bindin: a cell surface lectin mediating sperm-egg adhesion.
AUTHOR: Glabe C G; Grabel L B; Vacquier V D; Rosen S D
CONTRACT NUMBER: GH 23547 (NIGMS)
GM 0322 (NICHD)

HD 12986
+

SOURCE: Journal of cell biology, (1982 Jul) 94 (1) 123-8.
Journal code: 0375356. ISSN: 0021-9525.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 198212
ENTRY DATE: Entered STN: 19900317
Last Updated on STN: 19970203
Entered Medline: 19821202

AB We have examined the carbohydrate specificity of bindin, a sperm protein responsible for the adhesion of sea urchin sperm to eggs, by investigating the interaction of a number of polysaccharides and glycoconjugates with isolated bindin. Several of these polysaccharides inhibit the agglutination of eggs by bindin particles. An egg surface polysaccharide was found to be the most potent inhibitor of bindin-mediated egg agglutination. **Fucoidin**, a sulfated fucose heteropolysaccharide, was the next most potent inhibitor, followed by the egg jelly fucan, a sulfated fucose homopolysaccharide, and xylan, a **beta**(1 leads to 4) linked xylose polysaccharide. A wide variety of other polysaccharides and glycoconjugates were found to have no effect on egg agglutination. We also report that isolated bindin has a soluble lectinlike activity which is assayed by agglutination of erythrocytes. The bindin lectin activity is inhibited by the same polysaccharides that inhibit egg agglutination by particulate bindin. This suggests that the egg adhesion activity of bindin is directly related to its lectin activity. We have established that **fucoidin** binds specifically to bindin particles with a high apparent affinity (Kd = 5.5 X **10** (-8) M). The other polysaccharides that inhibit egg agglutination also inhibit the binding of 125I-**fucoidin** to bindin particles, suggesting that they compete for the same site on bindin. The observation that polysaccharides of different composition and linkage type interact with bindin suggests that the critical structural features required for binding may reside at a higher level of organization. Together, these findings strengthen the hypothesis that sperm-egg adhesion in sea urchins is mediated by a lectin-polysaccharide type of interaction.

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ACCESSION NUMBER: 2004:288252 BIOSIS
DOCUMENT NUMBER: PREV200400287009
TITLE: **Fucoidan** Restores Venule-Enhanced Capillary Flow in Diabetic Rat Mesentery.
AUTHOR(S): Nellore, Kavitha [Reprint Author]; Harris, Norman R
CORPORATE SOURCE: Bioengineering, The Pennsylvania State University, 205 Hallowell Building, University Park, PA, 16802, USA
kavi@psu.edu
SOURCE: FASEB Journal, (2004) Vol. 18, No. 4-5, pp. Abst. 196.21.
http://www.fasebj.org/. e-file.
Meeting Info.: FASEB Meeting on Experimental Biology: Translating the Genome. Washington, District of Columbia, USA. April 17-21, 2004. FASEB.
ISSN: 0892-6638 (ISSN print).
DOCUMENT TYPE: Conference; (Meeting)
Conference; Abstract; (Meeting Abstract)
LANGUAGE: English
ENTRY DATE: Entered STN: 16 Jun 2004
Last Updated on STN: 16 Jun 2004

AB Several studies have indicated that vasoactive metabolites can diffuse from postcapillary venules to dilate closely paired arterioles, and hence control arteriolar tone in a mechanism that involves nitric oxide (NO). In previous studies, we found in normal rats that a positive correlation exists between baseline capillary perfusion (RBC velocity) and % pairing, defined as the percent of the feeding arteriolar length that is within 15 microns of a postcapillary venule. In the present study, after 4 weeks of streptozotocin-induced **diabetes**, % pairing decreased approximately 50% in comparison to normal rats, which could lead to inadequate venular control of capillary flow. Additionally, the correlation between perfusion and % pairing was not significant (slope = 0.016 +/- 0.01 mm/s/%; p = 0.13), possibly due to decreased availability of NO. Treatment of diabetic rats with **fucoidan** (which inhibits selectin-mediated venular leukocyte rolling and hence decreases adherence) restored venular control of capillary perfusion (slope = 0.142 +/- 0.02 mm/s/%; p<0.001). This indicates that leukocytes in diabetic rats might

inhibit arterio-venular communication by producing oxidants that react with NO, or by the release of other mediators that can constrict nearby arterioles. In summary, lower % pairing and leukocyte-derived mediators may lead to inadequate control of capillary perfusion in **diabetes** . Supported by JDRF.

L22 ANSWER 45 OF 81 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation. on STN
ACCESSION NUMBER: 2001:493266 BIOSIS
DOCUMENT NUMBER: PREV200100493266
TITLE: Adhesion molecules differentially contribute to pain control in inflammation.
AUTHOR(S): Mousa, S. A. [Reprint author]; Machelska, H. [Reprint author]; Schopohl, J. [Reprint author]; Schaefer, M. [Reprint author]; Stein, C. [Reprint author]
CORPORATE SOURCE: Depart. of Anesthesiology, Freie Universitaet Berlin, Berlin, Germany
SOURCE: Society for Neuroscience Abstracts, (2001) Vol. 27, No. 1, pp. 732. print.
Meeting Info.: 31st Annual Meeting of the Society for Neuroscience. San Diego, California, USA. November 10-15, 2001.
ISSN: 0190-5295.
DOCUMENT TYPE: Conference; (Meeting)
Conference; Abstract; (Meeting Abstract)
LANGUAGE: English
ENTRY DATE: Entered STN: 24 Oct 2001
Last Updated on STN: 23 Feb 2002

AB This study evaluates the role of selectins, integrins and immunoglobulin superfamily members in the inhibition of inflammatory pain by peripheral endogenous opioids. Immediately before induction of Freund's adjuvant inflammation Wistar rats received i.v. injections of the selectin blocker **fucoidin** (5-25 mg/kg) or monoclonal antibodies (mAbs) against very late antigen-4 (VLA-4; 4-8 mg/kg), CD18 (2-4 mg/kg), intercellular adhesion molecule-1 (ICAM-1; 2-8 mg/kg) or platelet endothelial cell adhesion molecule-1 (PECAM-1; 1-**10** mg/kg) alone or in combination. Expression of P- and L-selectin, ICAM-1 and PECAM-1 in relation to **beta**-endorphin (END) expression in paw tissue was determined by double immunofluorescence. **Fucoidin** and anti-CD18 significantly decreased stress-induced peripheral analgesia. Blocking of rolling (**fucoidin** + anti-VLA-4) or adhesion (anti-VLA-4 + anti-CD18) of immunocytes decreased stress-induced peripheral analgesia, while anti-PECAM-1 had no additional effect. **Fucoidin** alone or in combination with anti-VLA-4 substantially decreased paw volume (PV). However, anti-VLA-4 + CD18 or **fucoidin** in combination with three anti-CAMs only slightly decreased PV. No major changes in paw temperature were observed. The number of immunocytes co-expressing L-selectin and END was increased in inflamed tissue. ICAM-1 and PECAM-1 expression was up-regulated on the vascular endothelium simultaneously with an enhanced immigration of END-containing immunocytes in the inflamed tissue. Apparently, the migration of immune cells containing opioids is predominantly dependent on selectins and integrins but not on PECAM-1.

L22 ANSWER 46 OF 81 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation. on STN
ACCESSION NUMBER: 2001:243736 BIOSIS
DOCUMENT NUMBER: PREV200100243736
TITLE: **Fucoidan** interacts with TGF-**beta** and modulates its activity: Implications for adult wound repair by mimicking the foetal environment.
AUTHOR(S): O'Leary, Ronan [Reprint author]; Rerek, Mark; Wood, Edward J. [Reprint author]
CORPORATE SOURCE: School of Biochemistry and Molecular Biology, University of Leeds, Leeds, LS2 9JT, UK
SOURCE: Biochemical Society Transactions, (2001) Vol. 29, No. 1, pp. A40. print.
Meeting Info.: 672nd Meeting of the Biochemical Society. Sussex, England, UK. Biochemical Society.
CODEN: BCSTB5. ISSN: 0300-5127.
DOCUMENT TYPE: Conference; (Meeting)
Conference; Abstract; (Meeting Abstract)
LANGUAGE: English
ENTRY DATE: Entered STN: 23 May 2001
Last Updated on STN: 19 Feb 2002

L22 ANSWER 47 OF 81 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation. on

STN
ACCESSION NUMBER: 1999:312094 BIOSIS
DOCUMENT NUMBER: PREV199900312094
TITLE: Endocytosis of myeloperoxidase by human monocyte-derived macrophages and multistep regulation of mannose receptor activity during macrophage differentiation.
AUTHOR(S): Ono, Takashi [Reprint author]; Imai, Katsuyuki; Yamada, Michiyuki; Nagasue, Naofumi
CORPORATE SOURCE: Second Department of Surgery, Shimane Medical University, Izumo, 693-0021, Japan
SOURCE: Journal of Clinical Biochemistry and Nutrition, (1998) Vol. 25, No. 3, pp. 109-119. print.
CODEN: JCBNER. ISSN: 0912-0009.
DOCUMENT TYPE: Article
LANGUAGE: English
ENTRY DATE: Entered STN: 17 Aug 1999
Last Updated on STN: 17 Aug 1999

AB Myeloperoxidase (MPO) purified from human neutrophils was endocytosed by human monocyte-derived macrophages with a K of uptake of **10**.6 nM and a Kd of 27.8 nM. **Fucoidan** and mannan inhibited the uptake of MPO into the macrophages, indicating that the uptake was mediated by mannose/fucose receptors. Internalized MPO was degraded with a half time of 5.5 h, and the degradation was inhibited by chloroquin. The presence of cytokines during the differentiation of monocytes into macrophages caused enhancement of the endocytosis of MPO by macrophage-colony stimulating factor (M-CSF), granulocyte macrophage-colony stimulating factor (GM-CSF), interferon-gamma (IFN-gamma), interleukin-5 (IL-5), and **transforming growth factor-beta** (TGF-**beta**), and inhibition of it by interferon-alpha (IFN-alpha). The stimulatory effect of IFN-gamma or GM-CSF was antagonized by IFN-alpha, but that of TGF-**beta** was not. In differentiated macrophages, the endocytosis was stimulated by IFN-alpha and TGF-**beta**, while it was inhibited by IFN-gamma. Expression of the receptor seems to be under multistep control during macrophage differentiation.

L22 ANSWER 48 OF 81 BIOSIS COPYRIGHT (c) 2005 The Thomson Corporation. on STN
ACCESSION NUMBER: 1996:152459 BIOSIS
DOCUMENT NUMBER: PREV199698724594
TITLE: Profiles of binding sites to lectin and custom-made neoglycoprotein probes in liver of developing duck embryos.
AUTHOR(S): Donaldo-Jacinto, Sonia [Reprint author]; Kayser, Klaus; Gabius, Hans-Joachim
CORPORATE SOURCE: Inst. Biol., Coll. Sci., Univ. Philippines, Diliman, Quezon City 1101, Philippines
SOURCE: Asia Life Sciences, (1995) Vol. 4, No. 2, pp. 125-135.
ISSN: 0117-3375.
DOCUMENT TYPE: Article
LANGUAGE: English
ENTRY DATE: Entered STN: 11 Apr 1996
Last Updated on STN: 11 Apr 1996

AB The possible roles played by lectin and lectin binding sites in liver development of duck embryos were initially investigated by looking at the interaction between lectin probes and receptor sites in the embryonic liver. Binding patterns to the lectins VAA, UDA and 14 kD, the fucan **fucoidan** and neoglycoproteins- BSA conjugated to glucNAc, **beta**-galNAc, fucose, mannose, maltose and lactose were monitored in liver of duck embryos. Embryos were studied with at most **10** specimens observed for days 1, 3, 5, 8, **10**, 13 and 17 of incubation. Of the probes used receptors for UDA, **fucoidan** and the neoglycoproteins maltose-BSA and **beta**-galNAc-BSA showed trends of developmental regulation. Maltose and UDA, **beta** -galNAc and UDA, maltose and **beta**-galNAc as well as **fucoidan** and **beta**-galNAc and **fucoidan** and UDA binding are strongly to moderately coexpressed in the periods of observation. **Fucoidan** was strongly to weakly coexpressed with maltose.

L22 ANSWER 49 OF 81 EMBASE COPYRIGHT 2005 ELSEVIER INC. ALL RIGHTS RESERVED. on STN
ACCESSION NUMBER: 2005001761 EMBASE
TITLE: Inhibition of leukocyte adherence enables venular control of capillary perfusion in streptozotocin-induced diabetic rats.
AUTHOR: Nellore K.; Harris N.R.

CORPORATE SOURCE: N.R. Harris, Dept. of Molec./Cellular Physiology, LSU Health Sciences Center, 1501 Kings Highway, Shreveport, LA 71130, United States. nharr61@lsuhsc.edu
SOURCE: Microcirculation, (2004) 11/8 (645-654).
Refs: 39
ISSN: 1073-9688 CODEN: MROCER
COUNTRY: United Kingdom
DOCUMENT TYPE: Journal; Article
FILE SEGMENT: 003 Endocrinology
005 General Pathology and Pathological Anatomy
025 Hematology
LANGUAGE: English
SUMMARY LANGUAGE: English

AB Objective: Vasoactive molecules can diffuse from venules to dilate closely paired arterioles and enhance capillary perfusion. Venular control of capillary flow has been found to be dependent on nitric oxide (NO), which might be scavenged rapidly in diabetic microvasculature due to the presence of activated leukocytes. This study attempts to improve venular control of capillary flow using **fucoidan**, which inhibits venular leukocyte adhesion. Methods: Microvascular red blood cell velocity was measured in the mesentery of streptozotocin-induced diabetic rats, with and without **fucoidan** treatment, and in normal rats. Arteriolar pathways leading to branching capillaries were videotaped to measure the percent of the surrounding area occupied by a venule (% pairing). Microvascular wall NO was measured using fluorescent diaminofluorescein-2-diacetate in diabetic rats, with and without **fucoidan** treatment. Results: In normal rats, close pairing of venules to arterioles resulted in faster capillary flow. However, after 4-5 weeks of **diabetes**, the correlation between capillary velocity and % pairing was no longer significant. Capillary velocity and % pairing decreased .apprx.50% in comparison to normal rats. Treatment of diabetic rats with **fucoidan** restored venular control of capillary flow and increased NO levels. Conclusion: Leukocyte-derived mediators that scavenge NO may lead to inadequate venular control of capillary flow in **diabetes** . Copyright .COPYRGT. 2004 Taylor & Francis Inc.

L22 ANSWER 50 OF 81 EMBASE COPYRIGHT 2005 ELSEVIER INC. ALL RIGHTS RESERVED. on STN
ACCESSION NUMBER: 2003132602 EMBASE
TITLE: Selectin inhibitors.
AUTHOR: Kaila N.; Thomas B.E.
CORPORATE SOURCE: N. Kaila, Department of Chemical Sciences, Wyeth Research, 200 Cambridge Park Drive, Cambridge, MA 02140, United States
SOURCE: Expert Opinion on Therapeutic Patents, (1 Mar 2003) 13/3 (305-317).
Refs: 73
ISSN: 1354-3776 CODEN: EOTPEG
COUNTRY: United Kingdom
DOCUMENT TYPE: Journal; General Review
FILE SEGMENT: 026 Immunology, Serology and Transplantation
030 Pharmacology
037 Drug Literature Index
LANGUAGE: English
SUMMARY LANGUAGE: English

AB The selectins play a significant role in mediating cellular adhesion and thus initiating the inflammatory and cell-mediated immune responses. In an inflammatory response, the selectins mediate the rolling of leukocytes on activated endothelial cells through the recognition of carbohydrate epitopes (e.g., sialyl Lewis(x), sLe(x)). The immune response relies on constant recirculation of lymphocytes from the blood through the vascular wall into the tissues and eventually back into the blood. Carbohydrate ligands on high endothelial venules capture circulating lymphocytes via L-selectin-dependent adhesion, leading to transmigration. Although leukocyte recruitment into the tissue is an essential physiological process, uncontrolled recruitment can lead to acute or chronic disorders such as inflammation, **autoimmune** diseases and tissue rejection during transplantation. Therefore, the development of agents that can modulate selectin-mediated events is an attractive therapeutic area. Summarised in this article are the patents published in this area from 1999 to present.

L22 ANSWER 51 OF 81 EMBASE COPYRIGHT 2005 ELSEVIER INC. ALL RIGHTS RESERVED. on STN
ACCESSION NUMBER: 2002070898 EMBASE
TITLE: L-selectin in health and disease.

AUTHOR: Rainer T.H.
CORPORATE SOURCE: T.H. Rainer, Accident/Emergency Med. Acad. Unit, Chinese University of Hong Kong, Prince of Wales Hospital, Shatin, NT, Hong Kong. rainer1091@cuhk.edu.hk
SOURCE: Resuscitation, (2002) 52/2 (127-141).
Refs: 176
ISSN: 0300-9572 CODEN: RSUSBS
PUBLISHER IDENT.: S 0300-9572(01)00444-0
COUNTRY: Ireland
DOCUMENT TYPE: Journal; General Review
FILE SEGMENT: 024 Anesthesiology
029 Clinical Biochemistry
037 Drug Literature Index
LANGUAGE: English
SUMMARY LANGUAGE: English

AB This article reviews recent advances in the knowledge of the role of L-selectin, an adhesion molecule that is expressed on the surface of circulating leucocytes, in animal and human physiology and pathophysiology. After a brief discussion on nomenclature and structure, it progresses through the evidence for expression and regulation of L-selectin, cell collection and purification, physiological function and roles. The special role of knock out mice and monoclonal antibodies in determining a role for L-selectin in inflammatory states is described before proceeding to discuss the importance of L-selectin ligands and shed L-selectin. A second section describes a role for L-selectin in pathophysiological states in animals and man, with special reference to trauma, systemic inflammatory syndromes and **sepsis**. The review concludes with a summary of the potential role of anti-inflammatory medication and L-selectin blockers in the management of inflammation.

L22 ANSWER 52 OF 81 EMBASE COPYRIGHT 2005 ELSEVIER INC. ALL RIGHTS RESERVED. on STN
ACCESSION NUMBER: 2001311737 EMBASE
TITLE: Molecular properties and involvement of heparanase in cancer progression and normal development.
AUTHOR: Vlodavsky I.; Goldshmidt O.; Zcharia E.; Metzger S.; Chajek-Shaul T.; Atzmon R.; Guatta-Rangini Z.; Friedmann Y.
CORPORATE SOURCE: I. Vlodavsky, Department of Oncology, Hadassah-Hebrew University Hospital, POB 12000, Jerusalem 91120, Israel. vlodavsk@cc.huji.ac.il
SOURCE: Biochimie, (2001) 83/8 (831-839).
Refs: 38
ISSN: 0300-9084 CODEN: BICMBE
COUNTRY: France
DOCUMENT TYPE: Journal; General Review
FILE SEGMENT: 016 Cancer
037 Drug Literature Index
030 Pharmacology
029 Clinical Biochemistry
022 Human Genetics
026 Immunology, Serology and Transplantation
LANGUAGE: English
SUMMARY LANGUAGE: English

AB Heparan sulfate proteoglycans (HSPGs) play a key role in the self-assembly, insolubility and barrier properties of basement membranes and extracellular matrices. Hence, cleavage of heparan sulfate (HS) affects the integrity and functional state of tissues and thereby fundamental normal and pathological phenomena involving cell migration and response to changes in the extracellular microenvironment. Here, we describe the molecular properties, expression and function of a human heparanase, degrading HS at specific intrachain sites. The enzyme is synthesized as a latent .apprx.65 kDa protein that is processed at the N-terminus into a highly active .apprx.50 kDa form. The heparanase mRNA and protein are preferentially expressed in metastatic cell lines and human tumor tissues. Overexpression of the heparanase cDNA in low-metastatic tumor cells conferred a high metastatic potential in experimental animals, resulting in an increased rate of mortality. The heparanase enzyme also releases ECM-resident angiogenic factors in vitro and its overexpression induces an angiogenic response in vivo. Heparanase may thus facilitate both tumor cell invasion and neovascularization, both critical steps in cancer progression. The enzyme is also involved in cell migration associated with inflammation and autoimmunity. The unexpected identification of a single predominant functional heparanase suggests that the enzyme is a promising target for drug development. In fact, treatment with heparanase inhibitors markedly reduces tumor growth, metastasis and

autoimmune disorders in animal models. Studies are underway to elucidate the involvement of heparanase in normal processes such as implantation, embryonic development, morphogenesis, tissue repair, inflammation and HSPG turnover. Heparanase is the first functional mammalian HS-degrading enzyme that has been cloned, expressed and characterized. This may lead to identification and cloning of other glycosaminoglycan degrading enzymes, toward a better understanding of their involvement and significance in normal and pathological processes.

L22 ANSWER 53 OF 81 EMBASE
on STN
ACCESSION NUMBER: 2001017661 EMBASE
TITLE: Structure and anticoagulant activity of sulfated galactans. Isolation of a unique sulfated galactan from the red algae Botryocladia occidentalis and comparison of its anticoagulant action with that of sulfated galactans from invertebrates.
AUTHOR: Farias W.R.L.; Valente A.-P.; Pereira M.S.; Mourao P.A.S.
CORPORATE SOURCE: P.A.S Mourao, Laboratorio de Tecido Conjuntivo, Hosp. Univ. Clementino Fraga Filho, Departamento de Bioquimica Medica, Caixa Postal 68041, Rio de Janeiro, 21941-590, Brazil. pmourao@hucff.ufrj.br
SOURCE: Journal of Biological Chemistry, (22 Sep 2000) 275/38 (29299-29307).
Refs: 41
ISSN: 0021-9258 CODEN: JBCHA3
COUNTRY: United States
DOCUMENT TYPE: Journal; Article
FILE SEGMENT: 029 Clinical Biochemistry
LANGUAGE: English
SUMMARY LANGUAGE: English
AB We have characterized the structure of a sulfated D-galactan from the red algae Botryocladia occidentalis. The following repeating structure (-4-α-D-Galp-1→3- β -D-Galp-1→) was found for this polysaccharide, but with a variable sulfation pattern. Clearly one-third of the total α-units are 2,3-di-O-sulfated and another one-third are 2-O-sulfated. The algal sulfated D-galactan has a potent anticoagulant activity (similar potency as unfractionated heparin) due to enhanced inhibition of thrombin and factor Xa by antithrombin and/or heparin cofactor II. We also extended the experiments to several sulfated polysaccharides from marine invertebrates with simple structures, composed of a single repeating structure. A 2-O- or 3-O-sulfated L-galactan (as well as a 2-O-sulfated L-fucan) has a weak anticoagulant action when compared with the potent action of the algal sulfated D-galactan. Possibly, the addition of two sulfate esters to a single α-galactose residue has an "amplifying effect" on the anticoagulant action, which cannot be totally ascribed to the increased charge density of the polymer. These results indicate that the wide diversity of polysaccharides from marine alga and invertebrates is a useful tool to elucidate structure/anticoagulant activity relationships.

L22 ANSWER 54 OF 81 EMBASE
on STN
ACCESSION NUMBER: 1999172309 EMBASE
TITLE: Leukocytes, the Janus cells in inflammatory disease.
AUTHOR: Nussler A.K.; Wittel U.A.; Nussler N.C.; Beger H.G.
CORPORATE SOURCE: A.K. Nussler, General/Transplantation Surg. Dept., Campus Virchow-Klinikum, Humboldt-University Berlin, Augustenburger Platz 1, D-10713 Berlin, Germany
SOURCE: Langenbeck's Archives of Surgery, (1999) 384/2 (222-232).
Refs: 107
ISSN: 1435-2443 CODEN: LASUF6
COUNTRY: Germany
DOCUMENT TYPE: Journal; Article
FILE SEGMENT: 009 Surgery
026 Immunology, Serology and Transplantation
037 Drug Literature Index
LANGUAGE: English
SUMMARY LANGUAGE: English
AB Background: Leukocytes, also called white blood cells, can be categorized into three main groups, granulocytes, monocytes, and lymphocytes, which can be further classified into various subgroups. Lymphocytes are known to intervene in immune responses such as secreting cytokines, killing cells, or the production of antibodies. Monocytes/macrophages participate in

chronic inflammation by synthesizing numerous mediators and eliminating various pathogens. Discussion: The main type of granulocytes is the neutrophil, also called the polymorphmononuclear (PMN) leukocyte; these are usually not found in normal 'healthy' tissue and are referred to as 'the first line of defense' against invading pathogens. However, besides the beneficial microbicidal activity of neutrophils, this cell type is also involved in the pathophysiology of organ damage in ischemia/reperfusion, trauma, **sepsis**, or organ transplantation. The exact role or function of leukocytes during inflammatory processes is far from being elucidated and can only be estimated from the enormous amount of literature on these cell types. The present review will focus mainly on PMN leukocytes and their ambiguous role in normal and inflamed tissue.

L22 ANSWER 55 OF 81 EMBASE COPYRIGHT 2005 ELSEVIER INC. ALL RIGHTS RESERVED. on STN

ACCESSION NUMBER: 97169880 EMBASE
DOCUMENT NUMBER: 1997169880
TITLE: Latent **transforming growth factor-β** : Structural features and mechanisms of activation.
AUTHOR: Munger J.S.; Harpel J.G.; Gleizes P.-E.; Mazzieri R.; Nunes I.; Rifkin D.B.
CORPORATE SOURCE: Dr. D.B. Rifkin, Department of Cell Biology, New York Univ. Sch. of Med., 550 First Avenue, New York, NY 10016, United States
SOURCE: Kidney International, (1997) 51/5 (1376-1382).
Refs: 78
ISSN: 0085-2538 CODEN: KDYIA5
COUNTRY: United States
DOCUMENT TYPE: Journal; General Review
FILE SEGMENT: 026 Immunology, Serology and Transplantation
029 Clinical Biochemistry
LANGUAGE: English
SUMMARY LANGUAGE: English

AB **Transforming growth factors-β** are cytokines with a wide range of biological effects. They play a pathologic role in inflammatory and fibrosing diseases such as nephrosclerosis. TGF-β s are secreted in a latent form due to noncovalent association with latency associated peptide (LAP), which is a homodimer formed from the propeptide region of TGF-β . LAP is disulfide linked to another protein, latent TGF-β binding protein (LTBP). LTBP has features in common with extracellular matrix proteins, and targets latent TGF-β to the matrix. Activation of latent TGF-β can be accomplished in vitro by denaturing treatments, plasmin digestion, ionizing radiation and interaction with thrombospondin. The mechanisms by which latent TGF-. **beta**. is activated physiologically are not well understood. Results to date suggest an important role for proteases, particularly plasmin, although other mechanisms probably exist. A general model of activation is proposed in which latent TGF-β is released from the extracellular matrix by proteases, localized to cell surfaces, and activated by cell-associated plasmin.

L22 ANSWER 56 OF 81 EMBASE COPYRIGHT 2005 ELSEVIER INC. ALL RIGHTS RESERVED. on STN

ACCESSION NUMBER: 96132078 EMBASE
DOCUMENT NUMBER: 1996132078
TITLE: Cross-reactivity of anti-sulfatide antibody with sulfated glycosaminoglycans and DNA in sera from patients with **autoimmune** hepatitis.
AUTHOR: Ikeda Y.; Toda G.; Han K.; Hashimoto N.; Yamada H.; Aotsuka S.
CORPORATE SOURCE: Department of Internal Medicine (I), Jikei University, School of Medicine, 3-25-8 Nishishinbashi,Minatoku, Tokyo, Japan
SOURCE: International Hepatology Communications, (1996) 4/5 (245-254).
ISSN: 0928-4346 CODEN: IHCOEP
COUNTRY: Ireland
DOCUMENT TYPE: Journal; Article
FILE SEGMENT: 006 Internal Medicine
026 Immunology, Serology and Transplantation
048 Gastroenterology
LANGUAGE: English
SUMMARY LANGUAGE: English

AB The cross-reactivity of anti-sulfatide antibody in sera from patients with **autoimmune** hepatitis was studied. The antibody activity, determined by enzyme-linked immunosorbent assay (ELISA), was reduced in the presence of heparin, heparan sulfate, **fucoidan**, and dextran sulfate, but not in the presence of keratan sulfate, dermatan sulfate and chondroitin sulfate. The reactivity with sulfatide of serum IgG was bound to a heparin-Sepharose column and a double-stranded DNA-cellulose column, and recovered in the fractions eluted with 1.5 M NaCl. Incubation of patients' sera with heparin and calf thymus DNA reduced the reactivity with sulfatide in 8 and 9, respectively, of 11 patients examined. These findings suggested that anti-sulfatide antibody was cross-reactive with heparan sulfate, especially heparin, and calf thymus DNA, and that this antibody recognizes certain structures containing repetitive, negatively charged groups as functional epitopes.

L22 ANSWER 57 OF 81 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2004:1059151 CAPLUS
DOCUMENT NUMBER: 142:33021
TITLE: Pharmaceutical compositions and methods relating to inhibiting fibrous adhesions using various agents
INVENTOR(S): Cashman, Johanne; Springate, Christopher; Hay, Bruce; Winternitz, Charles
PATENT ASSIGNEE(S): Arc Pharmaceuticals, Inc., Can.
SOURCE: PCT Int. Appl., 97 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004105737	A2	20041209	WO 2004-CA800	20040528

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.:		
US 2003-474907P	P	20030530
US 2003-477654P	P	20030610
US 2003-505257P	P	20030922
US 2003-505258P	P	20030922
US 2003-520574P	P	20031117
US 2003-520804P	P	20031117
US 2003-520808P	P	20031117
US 2003-529136P	P	20031211
US 2003-533669P	P	20031231

AB Compns. and methods involving administration of agents useful for the treatment, prevention, inhibition, etc., of fibrous adhesions.

L22 ANSWER 58 OF 81 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2004:503243 CAPLUS
TITLE: Effects of **fucoidan** extracted from brown sea weed on lipid peroxidation in mice
AUTHOR(S): Li, Deyuan; Xu, Ruyi; Zhou, Yunzhen; Sheng, Xiaobao; Yang, Anyun; Cheng, Jinlei
CORPORATE SOURCE: Institute of Nutrition + Food Research, Wuhan Economic College, Wuhan, 430035, Peop. Rep. China
SOURCE: Yingyang Xuebao (2002), 24(4), 389-392
CODEN: YYHPA4; ISSN: 0512-7955
PUBLISHER: Yingyang Xuebao Bianjibu
DOCUMENT TYPE: Journal
LANGUAGE: Chinese
AB The effects of **fucoidan** on the production of lipid peroxide in mice were studied. **Fucoidan** (10, 50, 150, and 300 mg kg-1 d-1) was orally administered to mice for 7 d, then all mice were injected i.v. with alloxan (70 mg kg -1), and 4 d later, LPO content in serum, liver, and spleen was determined Different doses of **fucoidan** were orally administered to alloxan-induced diabetic mice for 7 d, and LPO level was assayed. In vitro, **fucoidan** solution (0.05, 0.25, 0.75, and 1.5%)

only or with Cys/FeSO4 were added into liver or spleen homogenates, and LPO was determined Those groups administered with **fucoidan** prior to alloxan injection had remarkable low LPO values, as compared with exptl. control. **Fucoidan** (50 mg kg-1 d-1) prevented the increase of LPO in serum, liver, and spleen of diabetic mice by 32.7, 22.7, and 20.0% (P <0.001, 0.01), resp., and it also obviously reduced LPO levels in serum, liver, and spleen of diabetic mice by 34.1, 29.3, and 30.3%, resp. No statistical differences were found in LPO level between liver or spleen homogenates added with **fucoidan** only or with Cys/FeSO4 together. **Fucoidan** (po 50 mg kg-1 d-1) can prevent the increase of LPO in serum, liver, and spleen of diabetic mice obviously, but no inhibition effect was found on both spontaneous lipid peroxidn. of homogenates and that induced by Cys/FeSO4 in vitro.

L22 ANSWER 59 OF 81 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2003:870603 CAPLUS
DOCUMENT NUMBER: 139:341454
TITLE: Pharmaceuticals and cosmetics containing **fucoidan**
INVENTOR(S): Wu, Hua-Kang; Sakai, Takeshi; Adachi, Shinichi; Kato, Ikunoshin
PATENT ASSIGNEE(S): Takara Bio Inc., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 15 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003313131	A2	20031106	JP 2002-120321	20020423
PRIORITY APPLN. INFO.:			JP 2002-120321	20020423

AB Pharmaceuticals or cosmetics, useful for TGF-β formation promotion, wrinkle inhibition, skin elasticity improvement, skin thickening inhibition, and collagen formation promotion, contain high-mol.-weight fraction of **fucoidan**. Human skin fibroblasts were cultured with 1.0 μg/mL **fucoidan** high-mol.-weight fraction (from Kjellmaniella crassifolia) to show 16% type I pro-collagen formation and 581% TGF-β 1 formation based on control.

L22 ANSWER 60 OF 81 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2003:757448 CAPLUS
DOCUMENT NUMBER: 139:273196
TITLE: Methods and devices for detection and therapy of atheromatous plaque
INVENTOR(S): Fischman, Alan; Hamblin, Michael R.; Tawakol, Ahmed; Hasan, Tayyaba; Muller, James; Anderson, Rox; Elmaleh, David R.; Daghighian, Farhad
PATENT ASSIGNEE(S): The General Hospital Corporation, USA
SOURCE: PCT Int. Appl., 139 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003077723	A2	20030925	WO 2002-US38852	20021203
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
US 2003103995	A1	20030605	US 2002-163744	20020604
US 2003055307	A1	20030320	US 2002-215600	20020809
US 2003082105	A1	20030501	US 2002-215958	20020809
PRIORITY APPLN. INFO.:			US 2002-365673P P	20020315
			US 2002-163744 A	20020604
			US 2002-215600 A	20020809

US 2002-215958 A 20020809
US 2002-216026 A 20020809
US 2001-295627P P 20010604

AB The present invention relates to devices for detection and therapy of active atheromatous plaque and/or thin-capped fibro-atheroma ('vulnerable plaque'), using selectively targeted fluorescent, radiolabeled, or fluorescent and radiolabeled compns. The present invention further relates to methods and devices for detection and therapy of active atheromatous plaques and/or vulnerable plaques, using selectively targeted compns., optionally comprising fluorescent and/or radiolabeled compns. An apparatus for detecting plaque in a blood vessel comprises a light emitter emitting light of a first wavelength and a light detector detecting light of a second wavelength; whereby a fluorescent composition is administered to the blood vessel, the fluorescent composition localizes to the plaque, and light of the first wavelength causes the fluorescent composition localized to the plaque to emit light having the second wavelength. The light emitter and light detector are included in a probe which is inserted into the blood vessel. A photosensitizer comprising chlorin e6 coupled to maleylated bovine serum albumin was prepared and was shown to accumulate in macrophage-rich plaques of an animal model system analogous to vulnerable plaques in humans. An intravascular fluorescence catheter was efficiently localized to vulnerable plaque in a rabbit coronary artery and was then used to illuminate the plaque with light activating the chlorin e6 for photodynamic therapy.

L22 ANSWER 61 OF 81 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2003:324194 CAPLUS
DOCUMENT NUMBER: 139:345674
TITLE: Study on serum cholesterol regulation of FGS from Laminaria japonica Aresch
AUTHOR(S): Qu, Aiqin; Wang, Qilin; Zhang, Yinghui; Li, Shouling; Wang, Hairen; Hui, Lv
CORPORATE SOURCE: College of Life science, Shandong University, Jinan, 250100, Peop. Rep. China
SOURCE: Zhongguo Haiyang Yaowu (2002), 21(5), 31-33
CODEN: ZHYAE8; ISSN: 1002-3461
PUBLISHER: Shandongsheng Haiyang Yaowu Kexue Yanjiuso
DOCUMENT TYPE: Journal
LANGUAGE: Chinese

AB The hypercholesterolemia model was established by feeding mice with hypercholesterol diet. The mice were divided into 5 groups: control group, hypercholesterolemia model group, **fucoidan**-galactosan sulfate (FGS) 250, 750 and 1500 mg kg-1 administered groups (I, II and III). On the **10**, 20, 30 and 40th day, the serum cholesterol was determined The results were as follows: 40th day the concentration of total cholesterol (TC) (I, II and III groups) was 37.6, 54.2 and 66.2 mg dL-1, they showed lower than that of the control group; and the concentration of LDL-C was 47.6, 86.6 and 94.4 mg dL- 1, they were lower than that of the control group; while the concentration of HDL-C was 16.1, 38.2 and 36.7 mg dL-1, they showed higher than that of the control group. It was proved that FGS was an effective serum cholesterol regulator.

L22 ANSWER 62 OF 81 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2002:542200 CAPLUS
DOCUMENT NUMBER: 137:67860
TITLE: Aging and wrinkle formation of skin caused by UVB exposure are prevented and cured by the treatment with algal-extractive cosmetic product, "TOWADA". (2nd Report). Analysis of effective ingredient(s) and possible mechanisms
AUTHOR(S): Wu, Hua Kang H.; Matsushita, Hideyuki; Sakai, Takeshi; Kato, Ikunoshin
CORPORATE SOURCE: Biotechnol. Res. Lab., Takara Bio Inc., Otsu, 520-2193, Japan
SOURCE: Fragrance Journal (2002), 30(6), 106-112
CODEN: FUJAD7; ISSN: 0288-9803
PUBLISHER: Fureguransu Janaru Sha
DOCUMENT TYPE: Journal; General Review
LANGUAGE: Japanese

AB A review on the mechanism of skin aging, prevention and treatment of wrinkle by Towada (a lotion containing **fucoidan** extracted from gagome kombu), improvement of skin elasticity and decrease of epidermal thickness by the high mol.-weight fraction of the lotion (HMWF), decrease of collagen content by UVB and its recovery by HMWF, and increase of type I procollagen and TGF-β 1 synthesis in human skin fibroblast by HMWF.

L22 ANSWER 63 OF 81 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2002:72164 CAPLUS
DOCUMENT NUMBER: 136:123411
TITLE: Drugs or cosmetics containing **fucoidan** or its derivatives
INVENTOR(S): Wu, Hua-Kang; Sakai, Takeshi; Adachi, Shinichi; Yasuda, Mariko; Kato, Ikunoshin
PATENT ASSIGNEE(S): Takara Shuzo Co., Ltd., Japan
SOURCE: PCT Int. Appl., 66 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002006351	A1	20020124	WO 2001-JP6032	20010712
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
AU 2001069508	A5	20020130	AU 2001-69508	20010712
EP 1306387	A1	20030502	EP 2001-947980	20010712
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
US 2004043961	A1	20040304	US 2003-332701	20030113
PRIORITY APPLN. INFO.:			JP 2000-212143 A	20000713
			JP 2000-400615 A	20001228
			JP 2001-67445 A	20010309
			WO 2001-JP6032 W	20010712

AB Disclosed are drugs to be used as remedies or preventives for diseases wherein the production of β **-transforming growth factor** should be enhanced, agents for ameliorating or preventing wrinkles, agents for elevating or sustaining skin elasticity, agents for ameliorating or preventing skin thickening, or agents for preventing collagen reduction or enhancing collagen production; and cosmetics to be used for enhancing the production of β -**transforming growth factor**, ameliorating or preventing wrinkles, elevating or sustaining skin elasticity, ameliorating or preventing skin thickening, or preventing collagen reduction or enhancing collagen production, etc. These drugs/cosmetics are characterized by containing, as the active ingredient, at least one member selected from the group consisting of **fucoidan**, its decomposition products and salts thereof. **Fucoidan** was obtained from brown algae (Kjellmaniella crassifolia), and its effect on TGF-β 1 production in MG-63 cells was examined.
REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L22 ANSWER 64 OF 81 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2001:874367 CAPLUS
DOCUMENT NUMBER: 136:11179
TITLE: Oral administration of sulfated polysaccharides for the treatment of hyperlipidemia
INVENTOR(S): Tani, Hisanori; Ono, Hiroyuki; Oishi, Kazufumi; Watanabe, Masatoshi
PATENT ASSIGNEE(S): Kyodo Milk Industry Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001335491	A2	20011204	JP 2000-158112	20000529
JP 2003155244	A2	20030527	JP 2002-268941	20000529
PRIORITY APPLN. INFO.:			JP 2000-158112 A3	20000529

AB Oral compns. including food and beverages comprise **fucoidan** or **fucoidan**-like polysaccharides for the prevention and treatment of hyperlipidemia and hypertriglyceridemia, especially with the conditions of **diabetes**, obesity, and hypertension. **Fucoidan** was extracted from Cladosiphon okamuranus and used in formulating tablets, yogurts, candies, gums, etc.

L22 ANSWER 65 OF 81 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2001:816463 CAPLUS
DOCUMENT NUMBER: 135:339253
TITLE: Use of **fucoidin** in the treatment of arthritis
INVENTOR(S): Tarkowski, Andrej; Verdrengh, Margareta
PATENT ASSIGNEE(S): Sahltech I Goteborg AB, Swed.
SOURCE: PCT Int. Appl., 31 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001082936	A1	20011108	WO 2001-SE962	20010504
W: CA, NO, US				
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR				
PRIORITY APPLN. INFO.:			SE 2000-1631 A	20000504

AB The present invention relates to the use of **fucoidin** at the manufacture of pharmaceutical compns. for the treatment of arthritis in mammals, including humans. **Fucoidin** can be used for treatment of **septic** arthritis and can be used in combination with antibiotics. The activity of **fucoidin** is related in interaction with P selectins.
REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L22 ANSWER 66 OF 81 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2001:630401 CAPLUS
DOCUMENT NUMBER: 136:198876
TITLE: The role of non-parenchymal liver cells in the liver uptake of Staphylococcus aureus lipoteichoic acid (LTA) in vivo
AUTHOR(S): Van Amersfoort, E. S.; Van Berkel, T. J. C.; Kuiper, J.
CORPORATE SOURCE: Div. of Biopharmaceutics, Leiden/Amsterdam Center for Drug Research, Sylvius Laboratory, Leiden University, Leiden, 2300 RA, Neth.
SOURCE: Cells of the Hepatic Sinusoid (2001), 8, 40-42
CODEN: CHSIEL
PUBLISHER: Kupffer Cell Foundation
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Infections with gram-pos. bacteria are in approx. 50% of all cases responsible for the occurrence of **sepsis** and **septic** shock. Lipoteichoic acid (LTA) is one of the main components of the gram-pos. bacterial cell wall that is responsible for the induction of **sepsis**. We iodinated LTA and injected it i.v. in mice in order to determine the in vivo fate of this compound After i.v. injection 125I-LTA was slowly cleared from the plasma. At 5 min after injection up to 20% of the injected dose was recovered in the liver. Other tissues like lungs, spleen, skin, muscle, bone marrow, and kidneys contributed marginally to the plasma clearance. Within the liver, Kupffer cells, endothelial cells, and parenchymal cells were responsible for 50%, 30%, and 20% of the total liver uptake, resp. Scavenger receptors on the non-parenchymal liver cells contributed largely to the liver uptake of 125I-LTA, since competitors, like poly-I and **fucoidin**, inhibited about 40% of the liver uptake of 125I-LTA. The uptake of LTA by the Kupffer cells led to activation of Kupffer cells and tumor necrosis factor-α (TNF-α) induction. Blockade of the uptake of LTA by Kupffer cells inhibited the TNF-α production completely.
REFERENCE COUNT: 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L22 ANSWER 67 OF 81 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 2001:359739 CAPLUS

DOCUMENT NUMBER: 134:339847
TITLE: Food for diabetics
INVENTOR(S): Stahl, Bernd; Kliem, Michael; Farwer, Sandra; Sawatzki, Guenther; Boehm, Guenther
PATENT ASSIGNEE(S): N.V. Nutricia, Neth.
SOURCE: PCT Int. Appl., 24 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001033973	A2	20010517	WO 2000-EP11134	20001110
WO 2001033973	A3	20011004		
W: AL, AU, BR, CA, CN, ID, IN, JP, LT, LV, MK, MX, NO, NZ, PL, RO, SG, SI, US, ZA				
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR				
DE 19954233	A1	20010531	DE 1999-19954233	19991111
EP 1229803	A2	20020814	EP 2000-993030	20001110
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI, CY, TR				

PRIORITY APPLN. INFO.: DE 1999-19954233 A 19991111
WO 2000-EP11134 W 20001110

AB The invention relates to a carbohydrate mixture which is provided with at least one modified carbohydrate made of a carrier and a carbohydrate residue coupled therewith. The carrier is a digestible, glucose-containing carbohydrate in the form of a digestable glucan or a non-digestable storage carbohydrate, skeletal carbohydrate or low-mol.-weight component thereof. The carrier is coupled to a carbohydrate residue. Glucose release from the carbohydrate mixture is thus reduced by at least **10** %, detected in an in-vivo digestion system based on pancreatin and compared to a carbohydrate mixture which contains the same amount by weight of non-modified carbohydrates. The postprandial blood glucose concentration increase after eating can be moderated by means of the inventive carbohydrate mixture The glucose can thus be metabolized by diabetics in spite of the existing lack of insulin. The inventive carbohydrate mixture can be used in food for diabetics and in pharmaceuticals.

L22 ANSWER 68 OF 81 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1999:566176 CAPLUS
DOCUMENT NUMBER: 131:181662
TITLE: C-terminal histidine-tagged mutant heparin cofactor II with enhanced anti-thrombotic activity
INVENTOR(S): Church, Frank C.; Bauman, Susannah J.
PATENT ASSIGNEE(S): The University of North Carolina at Chapel Hill, USA
SOURCE: PCT Int. Appl., 64 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9943810	A1	19990902	WO 1999-US4137	19990225
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
AU 9928781	A1	19990915	AU 1999-28781	19990225
US 6207419	B1	20010327	US 1999-257581	19990225

PRIORITY APPLN. INFO.: US 1998-76210P P 19980227
WO 1999-US4137 W 19990225

AB The present invention describes heparin cofactor II mutants comprising a C-terminal amino acid extension with enhanced anti-thrombotic effects. Preferred are amino acid extensions comprising His of from about 2 to 20 amino acids. Most preferred are heparin cofactor II proteins comprising (His)6 and (His)5Pro C-terminal extensions. Further described are isolated nucleic acids encoding the inventive heparin cofactor II mutants,

and vectors and host cells containing the same. Also provided are pharmaceutical formulations containing the inventive heparin cofactor II mutants, preferably in the presence of a polyanion cofactor. In another aspect of the present invention are methods of inhibiting thrombin activity so as to inhibit blood coagulation, regulate wound healing, tissue repair, and/or inhibit inflammation in a subject in need thereof.
REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L22 ANSWER 69 OF 81 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1999:356164 CAPLUS
DOCUMENT NUMBER: 131:198732
TITLE: Effect of **fucoidin** on blood glucose in alloxan-induced diabetic mice
AUTHOR(S): Li, Deyuan; Xu, Zhan; Wang, Haibin; Zhang, Shenghua
CORPORATE SOURCE: Institute of Military Economy, Wuhan, 430035, Peop. Rep. China
SOURCE: Huazhong Nongye Daxue Xuebao (1999), 18(2), 191-193
CODEN: HNDXEK; ISSN: 1000-2421
PUBLISHER: Huazhong Nongye Daxue
DOCUMENT TYPE: Journal
LANGUAGE: Chinese
AB **Fucoidan** (FD) isolated from Laminaria japonica Aresch and administered at 10, 50, 150, and 300 mg/kg in advance for 7 days, made the blood glucose level in alloxan-treated mice decrease by 52.4%, 57.1%, 43.3%, and 36.9%, resp., in comparison with the control. FD injected at 50 and 10 mg/kg made the blood glucose value of alloxan-diabetic mice drop to 60.6% and 80.4% resp., in comparison to that before injection, and reduced water-intake by 50.6% and 36.2%.

L22 ANSWER 70 OF 81 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1999:350607 CAPLUS
DOCUMENT NUMBER: 131:14825
TITLE: A method of increasing nucleic acid synthesis with ultrasound
INVENTOR(S): Unger, Evan C.; McCreery, Thomas; Sadewasser, David
PATENT ASSIGNEE(S): ImaRx Pharmaceutical Corp., USA
SOURCE: PCT Int. Appl., 124 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9925385	A1	19990527	WO 1998-US23843	19981111
W: AU, CA, JP				
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
AU 9913906	A1	19990607	AU 1999-13906	19981111
PRIORITY APPLN. INFO.:			US 1997-971540 A	19971117
			WO 1998-US23843 W	19981111

OTHER SOURCE(S): MARPAT 131:14825
AB The present invention is directed to a method of increasing nucleic acid synthesis in a cell comprising administering to the cell a therapeutically effective amount of ultrasound for a therapeutically effective time such that said administration of said ultrasound results in said increased nucleic acid synthesis. The nucleic acid sequence may comprise an endogenous sequence or an exogenous sequence. In particular, the invention is directed to increasing the expression of stress proteins and repair proteins.
REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L22 ANSWER 71 OF 81 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1999:42596 CAPLUS
DOCUMENT NUMBER: 130:115061
TITLE: Wound dressing comprising a biodegradable cell anchoring layer
INVENTOR(S): Thomson, Brian Mark; Ali, Saad Abdul Majeed; Medcalf, Nicholas; Maltman, John; Winter, Sharon Dawn
PATENT ASSIGNEE(S): Smith & Nephew Plc, UK
SOURCE: PCT Int. Appl., 32 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent

LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9900151	A2	19990107	WO 1998-GB1882	19980626
WO 9900151	A3	19990325		
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, GW, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
AU 9882245	A1	19990119	AU 1998-82245	19980626
EP 989866	A2	20000405	EP 1998-932298	19980626
EP 989866	B1	20020925		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
JP 2002507908	T2	20020312	JP 1999-505386	19980626
AT 224738	E	20021015	AT 1998-932298	19980626
ES 2184294	T3	20030401	ES 1998-932298	19980626
US 6800282	B1	20041005	US 2000-446379	20000211

PRIORITY APPLN. INFO.:	GB 1997-13406	A	19970626
	GB 1997-25209	A	19971128
	WO 1998-GB1882	W	19980626

AB A wound dressing which comprises a carrier layer having a non-adherent to cell layer on a wound facing surface thereof is disclosed. The non-adherent layer has bonded thereto a biodegradable cell anchoring layer which anchors mammalian cells. In use, the degradable layer breaks down releasing the cells into the wound site which are discouraged from reattaching to the dressing by the non-adherent layer. Thus, the dressing can switch from a cell binding state to a state in which the binding of cells is discouraged. Systems, methods of treatment and methods of manufacturing the dressing are also disclosed. Opsit IV 3000 polyurethane film was exposed to nitrogen plasma and promptly covered with a thin coat of a solution containing 20% ethylene glycol diglycidyl ether (I) and 1% CM-cellulose (II). An aqueous solution of **10** mg/mL-heparin was then sprayed on top of I:II acting and the resulting material was dried at 60° for 5 h, then it was sterilized and stored dry. The above film was immersed in fetal calf serum and a suspension of human keratinocytes. Cells adhered to the film within 4-16 h. Following subsequent in vitro culture, the cells detached from the film and were released into the medium.

L22 ANSWER 72 OF 81 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1997:740073 CAPLUS
DOCUMENT NUMBER: 128:16429
TITLE: Methods for delivering compounds into a cell
INVENTOR(S): Unger, Evan C.
PATENT ASSIGNEE(S): ImaRx Pharmaceutical Corp., USA
SOURCE: PCT Int. Appl., 97 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 21
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9740679	A1	19971106	WO 1997-US7237	19970430
W: AU, BR, CA, CN, HU, JP, KR, MX, NO				
RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
US 6743779	B1	20040601	US 1997-841169	19970429
AU 9727490	A1	19971119	AU 1997-27490	19970430
AU 736301	B2	20010726		
EP 935415	A1	19990818	EP 1997-921460	19970430
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
JP 2001507207	T2	20010605	JP 1997-539185	19970430

PRIORITY APPLN. INFO.:	US 1996-640554	A	19960501
	US 1997-785661	A	19970117
	US 1997-841169	A	19970429
	US 1994-346426	A2	19941129
	WO 1997-US7237	W	19970430

OTHER SOURCE(S): MARPAT 128:16429
AB The present invention is directed to a method for delivering a compound into a cell comprising administering to the cell the compound to be delivered, an organic halide, and/or a carrier. Ultrasound may also be applied, if desired. Among many example is one showing transfection using cationic microspheres filled with perfluorobutane gas.

L22 ANSWER 73 OF 81 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1996:762086 CAPLUS
DOCUMENT NUMBER: 126:46258
TITLE: Polysulfated derivatives of .**beta**.-cyclodextrin and myo-inositol as potent inhibitors of the interaction between L-selectin and peripheral addressin: implying a requirement for highly clustered sulfate groups
AUTHOR(S): Shailubhai, Kunwar; Abbas, S. Zaheer; Jacob, Gary S.
CORPORATE SOURCE: Department of Immunology, G.D. Searle Co., St. Louis, MO, 63167, USA
SOURCE: Biochemical and Biophysical Research Communications (1996), 229(2), 488-493
CODEN: BBRCA9; ISSN: 0006-291X
PUBLISHER: Academic
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The authors utilized an in vitro assay that measures the binding of an L-selectin-human Fc chimera (LS-Fc) to [35S]sulfate labeled peripheral addressin (PNAd), a 120 kDa glycoprotein ligand for L-selectin in porcine lymph nodes, to evaluate inhibitory properties of a small group of sulfated derivs. of β -cyclodestrin (β -CD), sLex, and myo-inositol and their non-sulfated counterparts. The authors found that hepta-sulfated β -CD (IC50 = 0.2 mM) strongly inhibited the binding of L-selectin to PNAd. In contrast, the monosulfated β -CD was a poor inhibitor, displaying < **10**% inhibition at 0.5 mM and β -CD was not active as an inhibitor. Similarly, inositol hexakissulfate, a compound containing 6 sulfate groups on the inositol ring displayed an inhibition of about 61% at 0.5 mM concentration, whereas the non-sulfated myoinositol was not inhibitory. These finding provide evidence that clustering of sulfate groups enhances affinity of mols. for binding to L-selectin.

L22 ANSWER 74 OF 81 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1996:754422 CAPLUS
DOCUMENT NUMBER: 126:79901
TITLE: Method and kit for prevention of aggregation during reconstitution of dried proteins
INVENTOR(S): Prestrelski, Steven J.; Zhang, Mei Z.
PATENT ASSIGNEE(S): Prestrelski, Steven J., USA; Zhang, Mei Z.
SOURCE: U.S., 19 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5580856	A	19961203	US 1994-276008	19940715
PRIORITY APPLN. INFO.:			US 1994-276008	19940715

AB Dried proteins are stabilized against loss of biol. activity in formulations upon rehydration of the dried protein by adding a reconstitution stabilizer. The reconstitution stabilizer may be an osmolyte, lyotropic salt, water-soluble synthetic or natural polymer, surfactant, sulfated polysaccharide, protein, or buffer. A kit for producing an aqueous formulation comprises a 1st container containing a dried protein and a 2nd container containing the reconstitution stabilizer. Thus, when lyophilized recombinant human keratinocyte growth factor was reconstituted with water containing heparin or sucrose octasulfate, aggregation was only **10**-15% of that observed after rehydration with pure water.

L22 ANSWER 75 OF 81 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1996:740260 CAPLUS
DOCUMENT NUMBER: 126:9479
TITLE: Environmentally friendly nontoxic water-soluble cleaning compositions for release of polymers from surfaces

INVENTOR(S): Sakata, Shigenobu
PATENT ASSIGNEE(S): Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 3 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 08239693	A2	19960917	JP 1995-81645	19950302
PRIORITY APPLN. INFO.:			JP 1995-81645	19950302

AB The compns. comprise Na chondroitinsulfate (I), cyclodextrin (II), xanthan gum (III), xylan, xylose, Na pantothenate (IV), Na pyruvate (V), Na erythorbate (VI), 4-isopropyltropone (VII), H2O, benzyl alc. (VIII), and iso-PrOH and optionally contain monosaccharides, polysaccharides, antioxidants, lactic acids, preservatives, bactericides, secondary alcs., higher alcs., amino alcs., and/or microorganisms. An aqueous solution containing 70% mixture of I ≤25, xylan 0.1-0.5, xylose 0.1-0.5, glucose 0.1-0.5, III 0.1-0.5, II 1-3, VII 0.01-0.05, IV 1-5, V 1-5, VI 1-5, **10**% VIII, and 20% iso-PrOH exhibited good polymer release properties on contacting a polymer coating on a metal surface with the solution for 5-**10** min at room temperature

L22 ANSWER 76 OF 81 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1996:128033 CAPLUS
DOCUMENT NUMBER: 124:185545
TITLE: Gas filled microspheres as computed tomography contrast agents
INVENTOR(S): Unger, Evan C.
PATENT ASSIGNEE(S): IMARx Pharmaceutical Corp., USA
SOURCE: PCT Int. Appl., 67 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 5
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9532006	A1	19951130	WO 1995-US6499	19950522
W: AU, CA, CN, JP				
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
US 5874062	A	19990223	US 1995-445299	19950519
CA 2188557	AA	19951130	CA 1995-2188557	19950522
AU 9526013	A1	19951218	AU 1995-26013	19950522
AU 700799	B2	19990114		
EP 760684	A1	19970312	EP 1995-920616	19950522
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, MC, NL, PT, SE				
JP 10500692	T2	19980120	JP 1995-530494	19950522
AU 9914280	A1	19990527	AU 1999-14280	19990129
AU 740155	B2	20011101		
PRIORITY APPLN. INFO.:			US 1994-247656 A	19940523
			US 1995-445299 A	19950519
			US 1991-680984 A3	19910405
			US 1993-980594 A3	19930119
			US 1993-116982 A2	19930907
			WO 1995-US6499 W	19950522
			AU 1995-33103 A3	19951006

AB A contrast medium for computed tomog. comprises gas filled microspheres prepared from a gas and/or a gaseous precursor and one or more stabilizing compds. Microspheres containing perfluoropentane were prepared by introducing DPPC 77.5, DPPA 12.5, and DPPE-PEG 5000 **10** mol%, resp., into normal saline containing glycerol **10** weight% and propylene glycol **10** weight%. After adding perfluoropentane, the mixture was autoclaved, cooled to room temperature, and shaked to produce a dense foam.

L22 ANSWER 77 OF 81 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1993:139838 CAPLUS
DOCUMENT NUMBER: 118:139838
TITLE: Soluble scavenger receptor protein for treatment of endotoxemia
INVENTOR(S): Krieger, Monty
PATENT ASSIGNEE(S): Massachusetts Institute of Technology, USA
SOURCE: PCT Int. Appl., 56 pp.

CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9214482	A1	19920903	WO 1992-US1370	19920221
W: CA, JP				
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LU, MC, NL, SE				
CA 2104217	AA	19920823	CA 1992-2104217	19920221
EP 572541	A1	19931208	EP 1992-907392	19920221
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, MC, NL, SE				
JP 06508604	T2	19940929	JP 1992-507346	19920221
PRIORITY APPLN. INFO.:			US 1991-662227 A	19910222
			WO 1992-US1370 W	19920221

AB Endotoxemia is treated by administration of an effective endotoxin-binding amount of a polypeptide fragment of the extracellular portion of a sustantially pure macrophage scavenger receptor protein. Preparation of a soluble scavenger receptor from native proteins (via purification and proteolytic cleavage) and by recombinant DNA methodol. is described. DNA sequences (and corresponding amino acid sequences) for bovine and human soluble scavenger receptors are included. The soluble receptor protein has a similar binding specificity, and hence utility, as the full-length membrane-bound form.

L22 ANSWER 78 OF 81 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1993:116769 CAPLUS
DOCUMENT NUMBER: 118:116769
TITLE: Treatment of demyelinating diseases by agents that inhibit leukocyte adhesion to myelin
INVENTOR(S): Rosen, Steven; Huang, Kun; Singer, Mark; Geoffroy, Joyce
PATENT ASSIGNEE(S): University of California, Oakland, USA
SOURCE: PCT Int. Appl., 29 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9300919	A1	19930121	WO 1992-US5836	19920713
W: JP				
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LU, MC, NL, SE				
US 5227369	A	19930713	US 1991-727280	19910711
EP 593658	A1	19940427	EP 1992-915758	19920713
EP 593658	B1	19991222		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, MC, NL, SE				
AT 187888	E	20000115	AT 1992-915758	19920713
PRIORITY APPLN. INFO.:			US 1991-727280 A	19910711
			WO 1992-US5836 W	19920713

AB Blocking agents that inhibit lymphocyte homing receptors (LHR)-mediated binding of leukocytes to myelin are useful for the diagnosis and treatment of demyelinating diseases, such as **multiple sclerosis**. The blocking agents are carbohydrates, such as mannose 6-phosphate, fructose 1-phosphate, **fucoidin** fragments or the Hansenula hostii phosphomannan monoester (PPME) core. The LHR-binding moiety includes glycolipids and glycoproteins, such as endothelial cell surface glycoproteins. The blocking agent may also be an Ig which reacts with LHR. PPME (10 μg/mL) totally inhibited the in vitro binding of human lymphocytes to cerebellar myelin.

L22 ANSWER 79 OF 81 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1968:444153 CAPLUS
DOCUMENT NUMBER: 69:44153
TITLE: Glucuronoxylofucan, a cell-wall component of Ascophyllum nodosum. I
AUTHOR(S): Percival, Elizabeth
CORPORATE SOURCE: Roy. Holloway Coll., Englefield Green, UK
SOURCE: Carbohydrate Research (1968), 7(3), 272-83
CODEN: CRBRAT; ISSN: 0008-6215
DOCUMENT TYPE: Journal
LANGUAGE: English

AB A sulfated glucuronoxylofucan containing 49% L-fucose, **10**% D-xylose, and 11% D-glucuronic acid was extracted from the cell-walls of A. nodosum, after removal from the weed of laminaran, **fucoidan**, and the major part of the alginic acid. Partial hydrolysis of the extract gave 3-O-(β -D-glucopyranosyluronic acid)-L-fucose as a major structural feature of the mol. and separation of small quantities of 3-O-. **beta**.-D-xylopyranosyl-L-fucose and 4-O-α-L-fucopyranosyl-D-xylose. From the results of alkali treatment and mild methanolysis studies, deductions are made concerning the site of the sulfate groups. Characterization of the fragments found in the hydrolyzates, after periodate oxidation, reduction, and hydrolysis of the initial polysaccharide, the degraded polysaccharide recovered after partial hydrolysis, the alkali-treated polysaccharide, and the degraded material recovered after methanolysis, indicates that at least some of the D-glucuronic acid residues are (1 → 4)-linked, that some of the L-fucose residues are vulnerable to periodate, and that the mol. is branched with end-group and (1 → 4)-linked D-xylose residues situated near the periphery of the mol.

L22 ANSWER 80 OF 81 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1958:65669 CAPLUS
DOCUMENT NUMBER: 52:65669
ORIGINAL REFERENCE NO.: 52:11756f-i,11757a-i
TITLE: Structure of laminarin. II. Minor structural features
AUTHOR(S): Peat, Stanley; Whelan, W. J.; Lawley, H. G.
CORPORATE SOURCE: Univ. Coll. N. Wales, Bangor
SOURCE: Journal of the Chemical Society, Abstracts (1958) 729-37
CODEN: JCSAAZ; ISSN: 0590-9791
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable

AB The partial acid hydrolyzate of insol. laminarin showed on paper chromatography the presence of glucose (I), mannitol (II), fucose (III), laminaridextrins, and nonreducing oligosaccharides. The source of III was considered to be contamination from **fucoidin** since no III-containing oligosaccharides were found (cf. preceding abstract). The hydrolyzate was adsorbed on C-Celite and the monosaccharides eluted with H2O. The eluent reservoir was filled with H2O and the volume maintained constant with 20% EtOH while 195 fractions (500 ml. each) were collected; the eluent was changed to 50% EtOH, then to PrOH, giving 2 final fractions. Fractions 1-42 contained I, determined by reducing power (Somogyi, C.A. 40, 21725), and II, freed from I by fermentation with yeast and then identified and determined by conversion to its hexa-O-acetate. Fractions 43-54 contained III, identified as its phenylhydrazone, and a trace of I. Refractionation of fractions 55-68 gave isomaltose (IV), glucosyl-mannitol (V), and fractions containing increasing amts. of gentiobiose (VI) mixed with V. IV acetylated and fractionated gave a product with the properties of .**beta**.-isomaltose octa-O-acetate (VII). A portion of VII was deacetylated to measure the [α]D of the free sugar. Pure V hydrolyzed and treated with MeOH-HCl gave II, Me glucoside, and a trace of V. II was identified by conversion to its hexa-O-benzoate. Benzoylation of V gave 1-O-. **beta**.-D-glucopyranosyl-D-mannitol nona-O-benzoate, showing no m.p. depression with authentic material. The VI in fractions 55-68 and 69-75 [which contained mainly laminaribiose (VIII) and only small amts. of V and VI] was estimated by quant. chromatography on thick filter paper and determination of the reducing power. The Somogyi reagent (loc. cit.) was calibrated against authentic VI. No attempt was made to sep. V and VI. Pure VI was obtained for [α]D determination and for the preparation of its acetate by prolonged irrigation on thick paper. Fractions 76-95 contained only VIII which was first reduced with KBH4 and then acetylated to laminaribiitol nona-O-acetate, m. 108-9°, [α]18D - **10**.8° (c 0.53, CHCl3). Fractions 96-139 contained VIII, laminaritriose (IX), and 5 other sugars. Separation on thick filter paper gave 3 components identified as 3-O-β -isomaltosylglucose, [α]D 67° (H2O), 1-O-β -isomaltosylmannitol, and 1,6-di-O-.**beta**.-glucosylmannitol. The other 2 components were not identified but gave I, VIII, IX, and higher polysaccharides on partial acid hydrolysis. Fractions 140-8 consisted mainly of 1-O-.**beta**.-laminaribiosylmannitol (X). Fractions 149-61 contained approx. equal amts. of IX, X, and laminaribiosylglucose (XI). Fractions 162-71 contained IX and XI, fractions 172-95, only IX. The 50% EtOH and 25% PrOH eluates from C-Celite were refractionated by elution with 9 l. 22.5% EtOH and 4 l. 25% EtOH. The first four 1-l. fractions contained no sugar; subsequent fractions contained: I, IV, and IX; IX; IX and 3-O-. **beta**.-gentiobiosylglucose (XII); IX and XII; IX, XII, and the tetrasaccharide O-α-D-glucopyranosyl-(1 → 6)-O- .**beta**

.-D-glucopyranosyl-(1 → 3)-O- β -D-glucopyranosyl-(1 → 3)-D-glucose (XIII); IX, XIII, and a nonreducing tetrasaccharide (XIV); laminaritetraose (XV), XIII, and XIV; XV; XV. From 180 g. undried insol. laminarin were obtained [sugar, yield, (g.), [α]D (H2O), m.p. of acetate, [α]D of acetate (CHCl3)]:I, 55, 51.1°, 132-3°, -; II, 0.55, -, 122-3°, 25.0°; III, 0.55, -, 169° (L-fucose phenylhydrazone), -; VIII, 25, 19.1°, 162°, -28.2°; V, 2.3, -20.7°, 88-92°, 39.7° (benzoate); VI, 0.36, 8.5°, 191-2°, -4.8°; IV, 0.09, 121°, 145-6°, 97.5°; IX, 20, 2.3°, 120-1°, -40.4°; X, 1.1, -24.8°, 144-5°, -18.6°; XII, 0.48, -1.0°, -, -; XI, 0.36, -4°, 214-15°, -27°. From soluble laminarin (26.95 g. dried material): I, 5.82, 50.9°, 132-3°, 3.8°; III, 0.39, -, 166-7° (fucose phenylhydrazone), -; VIII, 2.22, 18.6°, 162-3°, -28.9°; V, 0.37, -20.4°, -, -; VI, 0.31, 9.4°, 192-3°, -5.0°; IX, 2.41, 2.0°, 120-1°, -40°. II was determined by its rotation in NH4 paramolybdate.

L22 ANSWER 81 OF 81 CAPLUS COPYRIGHT 2005 ACS on STN
ACCESSION NUMBER: 1955:69248 CAPLUS
DOCUMENT NUMBER: 49:69248
ORIGINAL REFERENCE NO.: 49:13305b-f
TITLE: Sulfatases. X. The isolation and characterization of biosynthetic arylsulfates
AUTHOR(S): Dodgson, K. S.; Rose, F. A.; Spencer, B.
CORPORATE SOURCE: Univ. Wales, Cardiff, UK
SOURCE: Biochemical Journal (1955), 60, 346-52
CODEN: BIJOAK; ISSN: 0264-6021
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable

AB cf. C.A. 49, 5537b. A number of aminoacridines and related compds. have been examined as precipitating agents for organic sulfates, particularly arylsulfates. Safranine, euflavine, and 5-aminoacridine gave crystalline salts of low solubility with Ph, p-acetylphenyl, and p-nitrophenyl sulfates. The aminoquinoline salts of the same sulfates were more soluble 5-Aminoacridine gave relatively insol. salts with the following sulfate (I) esters: 3-methylphenyl I, indoxyl I, 2-amino-3-carboxyphenyl I, 2-amino-5-carboxyphenyl I, 2-amino-4-methylphenyl I, 2-amino-4-chlorophenyl I, 3-amino-3-nitrophenyl I, 4-amino-3-phenylphenyl I, 6-amino-3-methylphenyl I, 2-amino-1-naphthyl-Ph I, 2'-methyl-4-dimethylamino-trans-stilbene 3-I, 2'-chloro-4-dimethylamino-trans-stilbene 3-I, 4-dimethylaminoazobenzene 3-I, dehydroisoandrosterone I, galactose 3-I, 1,2,5,6-diisopropylidene glucose 3-I, laminarin I, carrageenin, **fucoidin**, heparin, and chondroitin I. The following were not precipitated: isoandrosterone I, Et I, sinigrin, glucose 3-I, glucose 6-I, uric acid, urea, glycine conjugates, mercapturic acids, glucosiduronic acids (except those of stilbestrol and dienestrol), benzoic acid, oxalic acid. Ph phosphate and p-nitrophenyl phosphate form ppts. 5-Aminoacridine was used to isolate the aryl sulfates formed after feeding p-chlorophenol, chlorobenzene, and 4-chlorocatechol to rabbits. The 4-chlorocatechol monosulfates isolated from the urines of rabbits receiving chlorobenzene or 4-chlorocatechol were shown to be 4-chloro-2-hydroxyphenyl I. The synthetic monosulfate had the same structure.